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ORIGINAL COMMUNICATIONS.

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A DISCOURSE, introductory to a Course of Lectures on the Theory and Practice of Physic, containing, Observations on the Inductive System of prosecuting Medical Inquiries, and a Tribute to the Memory of the late Dr. Benjamin Rush; delivered at the College of Physicians and Surgeons, on the 3d of November, 1813. By DAVID HOSACK, M. D. F. L. S. Professor of the Theory and Practice of Physic and Clinical Medicine in the University of the State of New-York, Member of the American Philosophical Society, &c.

GENTLEMEN,

AMIDST the numerous improvements which have recently taken place in the literary establishments of the city and state of New-York, the institution of a College of Physicians and Surgeons, exclusively devoted to the great purposes of medical education, is certainly an event deserving the highest commendation. It reflects equal honour upon its founders, the Regents of the University, and upon the Legislature, from whom it has received its first endowment and patronage.

This institution was first projected, and a law passed, authorizing the Regents of the University to carry it into effect, as early as 1791 ; but motives of respect to the Trustees of Columbia College, who had annexed a medical school to that seminary of learning, prevented the Regents from carrying the views of the Legislature into operation until 1807, when a charter was first granted for that purpose.

The exercise of the power delegated to the Regents by the act of the Legislature referred to, has afforded just cause of congratulation to the friends of science, as an event, of all others, calculated to advance the usefulness and respectability of the medical profession, the celebrity of the state, and the honour of our country. That the high expectations which were entertained of the benefits that would flow to the community from its establishment were well founded, the history of the College, even during the short period it has been in operation, abundantly testifies : for, during the six sessions that have elapsed, nearly four hundred gentlemen have received the benefits of instruction afforded at this establishment, and of that number about forty have been admitted to the honours of graduation.

But the Regents of the University, as well as the members of the profession in general, have ever been duly sensible of the benefits that would result from an union of the Professors of this College with those constituting the Faculty of Physic of Columbia College. Impressed with the importance of such union, the Regents of the University, in the winter of 1811, respectfully solicited the friendly offices of the Board of Trustees of Columbia College in combining the two medical institutions. This event, so desirable in itself, and which promises to be productive of signal and permanent advantages to the profession and the community, has at length been happily accomplished.



Permit me, gentlemen, students of medicine, to offer you my congratulations upon the favourable auspices under which the present session of this College commences : for to you it must prove peculiarly beneficial ; as in no other part of the United States can you obtain so extensive a system of medical education as that now afforded by this university. But the establishment of this College, and the ultimate union of the Medical Schools of New-York, constitute an important era in the history of our state ; and may I not add, in the history of medical science ? For what advantages and improvements may we not reasonably anticipate from the united labours of those who now occupy the several professorships of this College, and of the numerous pupils who may be expected hereafter to resort to this city for instruction ?

New-York, in her commercial and agricultural character, has long been distinguished. In these respects, she has justly been considered one of the most important states of the union ; but when we take into view the immense provision she has made for common schools ; the extensive pecuniary contributions made to her numerous academies ; the appropriations granted to her different colleges ; the incorporation of new literary societies in different parts of her extensive territory ; the acts lately passed for the promotion of medical science ; the incorporation of state and county medical societies ; the liberal provision made for that invaluable charity and practical school of medicine, the New-York Hospital ; and the establishment and endowment of the Institution in which we are now convened, it must be admitted that her pre-eminence is not confined to her population, her commerce, or her agriculture, but that she is equally distinguished for her protection and cultivation of the arts and sciences, and shortly must combine every advantage that the most favoured states of the union may have individually enjoyed.

My anticipations lead me still further : When peace may be restored, and the benefits of commercial and literary intercourse with the old world be again experienced by this western hemisphere, but a few years can elapse when the universities of New-York, of Pennsylvania, of Massachusetts, of Connecticut, and of Maryland, will hold an honourable competition with the most distinguished seats of learning that now adorn the European continent.

In the profession of medicine it may already be said, that in the United States we possess all the necessary resources for the most finished system of education that can be obtained in any part of the world, not excepting the justly celebrated medical schools of Edinburgh, London, or Paris.

In anatomy, physiology, the principles and practice of surgery, midwifery, the materia medica, chemistry, botany, mineralogy, and other branches of natural history, we have the most abundant means of instruction both practical and theoretical. And in the study of the theory and practice of physic, in acquiring a knowledge of the diseases of our country, we enjoy advantages, which, to the American pupil, are superior to those of any of the schools of the old world : for such is the influence of soil, climate, vicissitudes of season, and the state of society, upon acute diseases, that in this country they exhibit in many respects a character different from those of Great Britain or of the continent of Europe. Hence it happens, that the American physician, who may have had all the advantages of a foreign course of study, who may have enjoyed all the benefits of instruction which the infirmary of Edinburgh or the hospitals of London or Paris afford, if he has not previously acquired a knowledge of the febrile and other acute diseases of this climate, upon his return to his native country has still the most important practical lessons to learn, and which experience alone can supply. In this respect, you have advantages at home which you cannot obtain



abroad; nay, more, although we have been indebted to Europe for most of the knowledge we possess in the healing art, the European physician has still much to receive in return: he has yet to learn the history of the febrile and other diseases of this country; the varieties they exhibit; the effect of peculiarities of constitution and climate; the causes which produce them, and the various modes of treatment they severally require, before he can attain to those principles which are necessary to constitute a system of practice. For it is justly remarked by an eminent medical writer,\* that "no system of medicine can be perfect, while there exists a single disease which we do not know, or cannot cure." There cannot, therefore, be a complete system of medicine until our country has furnished the description and the cure for all its peculiar diseases.

American genius has already largely contributed to the improvement of the arts, and has done much in developing the principles of civil government. For you and your successors, probably, is also reserved the discovery of those principles in medicine which are necessary to complete the fabric that has been begun by a Sydenham, a Boerhaave, a Hoffman, a Cullen, and other celebrated physicians of Europe. Cherish, then, the feelings which this prospective view excites, and let your exertions correspond with the obligation it imposes.

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THE Practice of Physic, which, in connexion with Clinical Medicine, it is my province to teach in this University, is very properly defined, by a great systematic writer, to be the art of discerning, distinguishing, preventing, and curing diseases. The discernment of a dis-

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\* Dr. Rush.

ease, as Dr. Cullen very properly denominates it, is only to be acquired by long and habitual observation at the bedside of the sick, for it frequently happens, that not only the symptoms, but the causes of disease, are so concealed, that they escape the observation both of the patient and the bystander ; and, even by the physician, are only to be discovered by habitual attention to the phenomena of health as well as the symptoms of disease. But this discernment admits of still more extensive application, as it presents to the mind those circumstances attendant upon diseases, which no language can define. For although books of practice, and systems of nosology may furnish the description of the symptoms of disease, and faithfully delineate the more *prominent* features by which they are characterized, there are certain nicer shades of discrimination, which frequent converse with the sick can alone detect : for diseases, like plants and animals, have their peculiarities of character, which no system of nosology will supply, no description, however voluminous or minute, can impart, which no medical Lavater has yet delineated, and with which practice alone can make us acquainted.

It is only the practical botanist who can distinguish plants which have a close resemblance. The eye of the practical physician, in like manner, when quickened by habit, readily distinguishes one form of fever from another, but which are all confounded in the eyes of the hasty observer, or of him whose preconceived notions have interposed a medium which obscures his vision. But this knowledge of the symptoms of disease is not sufficient to lead us to their prevention and cure. Whatever may be the readiness with which diseases may be perceived, or however minute may be our acquaintance with the varied phenomena they exhibit, it is only the knowledge of the various causes by which they are produced, and of the structure of the system upon which they operate, that can direct us to a safe and judicious practice ; for, from



these sources alone, the great principles upon which the treatment of disease is to be conducted must be derived.

These causes are of three kinds : such as are generally inherent in our frame, and predispose the system to be acted upon ; those which are the most immediate, and for the most part external agents in exciting disease ; and lastly, the proximate cause, which denotes the condition of the part affected, or of the whole system, and upon the change or removal of which the corresponding changes or removal of the disease depends. To use the elegant language of Dr. Gregory, that ornament of our profession and of classical literature, "*causa proxima est, quæ presens, morbum facit, sublata tollit, mutata mutat.*"\*

The theory of physic, therefore, may be defined to be, that system of principles which is deduced from a knowledge of the human structure, and of the predisposing, exciting, and proximate causes of disease, and by which the practice of medicine is to be directed. By many, however, the term theory has been abused, by considering it as synonymous with every hypothesis that has been promulgated for the purpose of explaining the phenomena of diseases, and with which medicine, like every other branch of philosophy, has in all ages been corrupted. The question then presents itself, by what process are we to attain to those principles so necessary as subservient to practice ? I answer, by *accurate observation, judicious experiment, and cautious induction from the facts which they present.* These are the sources whence was deduced that luminous system of philosophical investigation introduced into physics by Lord Bacon, Robert Boyle, and Sir Isaac Newton. They are the same sources whence those celebrated metaphysicians, Reid, Gerard, Campbell, and Stewart, have drawn those principles which

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\* *Conspectus Medicinæ:*

have recently been applied, with so much success, in explaining the phenomena of mind. And from the same sources, as exemplified in the pages of Hippocrates, Sydenham, and Boerhaave, are to be derived those principles in medicine which can alone conduct us to a judicious and successful practice. Suffer me to arrest your attention in the contemplation of those distinguished benefactors to medical science.

Anterior to the days of Hippocrates, we have no traces of any thing like theory or principles in medicine, much less a regular system of practice. On the contrary, before his time, the only medical knowledge which existed, was the result of random experience, or accidental observation, of the effects of remedies in particular diseases; totally uninfluenced by principles derived from the structure of the human frame, the symptoms of disease, or the causes which produced them. The practice of that day was, consequently, purely empirical, in the strict etymological sense of the term; but it is to be observed, that at that early period of society, the diseases of mankind were few in number when compared with those which intemperance, luxury, and what are called the refinements of civilized life, have since introduced.

Hippocrates was the first physician, of whom we have any record, who attempted to deduce from the facts which were presented to him, certain principles upon which to conduct the cure of diseases. He, therefore, first united the theory with the practice of physic; but it was not that speculative theory which proceeds from hypothesis to facts, but from facts to principles. Hippocrates was in medicine what Lord Bacon was in philosophy: he first pointed out the true road to correct knowledge in our art. Permit me to devote a few moments to this grateful theme, while I endeavour to rescue his venerable name from the imputations which have been cast upon it, even by Lord Verulam himself, and who, it is more than to be suspected, drew from the works of Hip-



pocrates, with which he was intimately acquainted,\* that very system of investigation which characterizes the *Novum Organum*, but which no less distinguishes the writings of our great progenitor

Hippocrates was born in the island of Cos, about four hundred years before Christ. At that memorable period of Grecian splendour, in which Apelles, Praxiteles, and Demosthenes, adorned the several arts of painting, sculpture and eloquence, Hippocrates was not less distinguished for his improvement in the healing art, and for which he received not only a crown of gold, but the highest honours Athens could bestow. Having applied himself with indefatigable industry to the various branches of human learning, then most generally taught; having become a proficient in the philosophy of the schools of Cnidus and of Cos, and afterwards added to his stock of knowledge by travel; with a mind thus enriched, and a bodily frame no less vigorous than his mind, (for it sustained him upwards of an hundred years) he entered upon the practice of physic.

Here his talents appear eminently great. The same system of inductive reasoning, which was afterwards adopted by Lord Bacon, was no less the guide of Hippocrates. For it was the maxim of the latter, as of the former, that every principle should be founded upon the firm basis of observation and experience, and that the only correct mode of reasoning is that which proceeds from the effects to the causes which produce them. With this view he not only availed himself of that mass of facts which the temples of Greece supplied,† but he patiently sat down at the bedsides of the sick, recorded every successive symptom of disease,

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\* Bacon on the Advancement of Learning, book II. See his works, vol. 1. p. 122, &c. Lond. Ed. 1803.

† Vide *Coacæ prænotio*. Lib. *Prænotio*. I. *Prædict*. II.

the changes it underwent, as well as the manner of its termination, whether in the dissolution or the recovery of his patient. Although he was unacquainted with the circulation of the blood, or the value of the pulse as the index of disease, he carefully attended to every change in the *respiration* of his patient, which led him to conclusions equally correct; nor was he less attentive to the various secretions of the system, both in the healthy and in the morbid state. Indeed, so minute is the description which he gives of the various appearances the secretion from the lungs undergoes in the different stages of pneumonic inflammation, that to him alone are we yet, at this very day, indebted, not only for the best, but I do not hesitate to say, the only correct and satisfactory description that has been given of that disease. Although totally unacquainted with the nature of the materials constantly emanating from the surface of the body in perspiration, and which is but of recent discovery, he well knew the importance of that function, both in health and disease. But the observations of Hippocrates were not confined to the human body, and to the phenomena it presents in the morbid state: the action of every external agent no less attracted his observant eye. The air he breathed, the water he drank, the earth he trod upon, alike became the subjects of his attention, as far as they were supposed to exert an influence upon our system.\* Nor were these the limits of his observation: The movements of the heavenly bodies; their influence upon our planet and upon our frame, were also embraced in his extended view.† From data such as these, and from a long and extensive experience, he founded and built up a system of pure and rational philosophy. As the great object of all his labours was to arrive at truth, and as Bacon

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\* Hippoc. de Morb. Epidem. Lib. 1, 2, 3, &c. et de Aere, Aquis, et Locis.

† Vide Lib. citat. et in aphorism. Sect. 3, 4.



discarded the logical definitions and distinctions of Aristotle, so did Hippocrates reject the principal hypothesis of Pythagoras and the other mysterious dogmata of the sophists of his age. Governed by the true spirit of what has lately received the appellation of Newtonian philosophy, he admitted so much only as enabled him to reason more justly in investigating the causes, and in discovering the method of cure in diseases. As the philosophy of Bacon differed from the fashionable logic, or syllogistic form of demonstration, which, until his time, was almost universally received; equally great was the difference between the method of Hippocrates and that of his predecessors.

But while we offer the tribute due to this great philosopher and physician, it is not to be denied that his knowledge of the internal structure of the human frame was necessarily limited, and, in many respects, erroneous. But although, as has already been intimated, he was ignorant of the circulation of the blood; although he confounded an artery with a vein, and a nerve with a tendon, he effected, even in his own time, more real improvements in the healing art than all his predecessors had done in the space of two thousand years before him; and, we may add, more than all his successors did in two thousand years after him. But although he lived in the infancy of medicine, his works, like those standards of perfection, the columns of Grecian architecture, will ever remain the admiration of the world, and the best models for our imitation. "His fame," to employ the language of an able and eloquent writer,\* "like a stupendous and solitary mountain, seems to have acquired new height by the wasting effects of time upon the adjacent country."

After the death of Hippocrates, little was done to complete the building of that fabric of which he had laid the founda-

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\* Dr. Rush.

tion. But while the example which he set was imitated, and the road he pointed out was followed, though with unequal steps, there was still a gradual but a sensible augmentation to the stock of medical knowledge. Hippocrates was succeeded by Plato and Aristotle, who concurred, though in different ways, to check the progress of medicine for many centuries. They corrupted almost every branch of human learning. In the room of the Hippocratic method of induction, were now substituted captious disputations and syllogistic quibbles.—The mode of reasoning which they adopted, though it afforded some aid in the detection of sophistry, gave little assistance in the investigation and discovery of truth. In short, instead of having recourse to observation and experiments, they multiplied hypothetical propositions, confounded realities with fictions, preferred words to things: in the language of Lord Bolingbroke, “they invented systems more baneful to truth and real learning, than the ravages of the Goths and Vandals.”

But the circumstance, which of all others, gave currency to the Aristotelian doctrines in medicine, was their adoption by Galen, a man of great learning, little inferior to Aristotle himself in genius, and an ardent admirer of his peculiar talents. He laboured with great zeal to complete and offer to the world a new theory in medical science. His fertile imagination supplied the place of facts, and as he infused into all his writings the subtle distinctions and metaphysical notions of Aristotle, he so far corrupted, more than any other writer in medicine, the true spirit of philosophical investigation. Yet it deserves to be remembered, and to the immortal honour of Hippocrates, that Galen himself was aware, that the *practice* of Hippocrates was the most just and rational, and that he himself pursued it in the treatment of diseases. What progress the doctrines of Galen made, and how long they were implicitly adopted, are facts too familiarly known



to require further mention on this occasion. But happily for mankind, and the interests of science, towards the conclusion of the sixteenth, and beginning of the seventeenth century, another galaxy of talents appeared that dissipated those clouds with which the Aristotelian philosophy had enveloped the world, and which both philosophers and physicians, Ixion-like, had embraced for nearly fourteen hundred years : You will anticipate me in the names of Bacon, Boyle, Galileo, Locke, and Newton. It was not until this period that philosophers and physicians "emancipated themselves from their vassalage to Aristotle and Galen." It was not until this period that the human mind again recovered its freedom and dignity, and genuine science began to develop what had remained involved in the deepest obscurity. To commence this illustrious work was reserved for Lord Bacon, a man in every respect qualified for so great an undertaking. By the publication of his *Instauration of the Sciences*, he *rescued reason and truth* from the slavery in which they so long had been held ; he effected a total revolution in the empire of science, and laid the foundation of the inductive system of philosophizing, or rather, as we have already attempted to show, he revived the Hippocratic mode of acquiring knowledge.

Nearly cotemporary with those distinguished characters was Thomas Sydenham. As he possessed a strength of understanding, an accuracy of discernment, and an ardour of curiosity no less rare than desirable, he soon perceived the absurdity and pernicious effects of the visionary theories which had preceded. He accordingly devoted the most indefatigable attention to the study of nature, and what he considered of nearly the same importance, the aphorisms and other writings of Hippocrates. He caught the true spirit of philosophy which they inculcate, and was the first in medicine, after the revival of learning, who adopted the inductive me-



thod of Bacon, and enforced the plan of study first pursued by the father of medicine. In his preface to his works he states, that we are to arrive at perfection in our science by two means: a faithful relation of the causes and symptoms of diseases, and from thence deducing and establishing their method of cure. Like his great prototype, he accurately noticed the phenomena and progress of diseases, and the manner of their termination, as well as the effects of medicine and diet, in their prevention and cure. He also, more minutely than any other writer, recorded the prevailing epidemics of each year; the influence of seasons, climate, and the sensible qualities of the atmosphere. Want of time, however, forbids that I should here enlarge upon his merits. But while I recommend to you a close and repeated examination of his writings, in order to enable you the better to appreciate them, I shall conclude this imperfect sketch of his character in the words of his celebrated successor: "He was the ornament of England, the Apollo of the art, whom I never consider but my mind presents me with the true picture of an Hippocratic physician, and to whom physic is so much indebted, that all I can say will fall far short of his merit."\*

Let us now take a brief notice of another individual, to whom, next to Hippocrates and Sydenham, our profession is most indebted—the illustrious Boerhaave, who was no less eminent in medicine than Sir Isaac Newton in philosophy. Boerhaave flourished about forty years after Sydenham. I shall content myself with giving you some idea of the extent of the knowledge which he possessed, rather than of the manner in which he acquired it. He was well versed in the Latin, Greek, Hebrew, and other of the oriental languages, and also in those of modern Europe. He was a profound mathematician and algebraist, and a remarkable proficient in

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\* Boerhaave.

the philosophy both of mind and matter. He studied the works of Hippocrates, and all the Greek, Roman, and Arabian physicians, as well as those of the most eminent among the moderns. He was the advocate of experimental science, and was himself a distinguished practical anatomist and chemist. In botanical knowledge he was among the first of his age, and in his acquaintance with the various departments of the *materia medica*, exceeded by none. He thus furnishes the most striking example to show, that it is practicable for a single individual to excel in almost every branch of human learning. Of the numerous writers on medical science whom he studied, he particularly admired Hippocrates among the ancients, and Sydenham among the moderns. Upon his election to the professorship of medicine, in 1701, he pronounced an oration "*de commendando studio Hippocratico*," in which he not only recommended the writings of the Coan sage as among the most valuable sources of practical information, but particularly enforced the *Hippocratic mode* of conducting medical inquiries.

He delivered lectures on the theory and practice of medicine, botany and chemistry, with the greatest clearness, precision and eloquence; and had such a conflux of students, from all parts of the world for his hearers, as never, probably, had been presented before any professor. Upon the death of Le Mort, he was placed at the head of every branch of medicine, when the number of his students became so great, that, according to his biographer, Dr. Matty, Leyden itself was scarcely sufficient to accommodate them. In his *Institutions of Medicine* and his *Aphorisms*, which have been pronounced two of the most concise, yet comprehensive works which have ever been presented to the medical world, and which have been the text books of the universities of Europe for nearly a century, you will find the result of all that learning, experience and talents, for which he was so emi-



nently distinguished. But the great talents, the indefatigable application, and the extensive knowledge of Boerhaave held but a second place in his character: In the language of Dr. Johnson, "he was an admirable example of temperance, fortitude, humility, and devotion;" and we may add, christianity enrols his name among her firmest and steadiest supporters.

But, gentlemen, while we thus revere the great and good of the old world, let us do homage to merit in the new. While we acknowledge the benefits which the science of medicine has received from the physicians of Europe, let us not be unmindful of the debt of gratitude we owe to a native of our own soil, who was no less an ornament to human nature, than his various exertions have been precious to his profession, to science, and his country.

Your feelings, I trust, will be in unison with mine, while, in addition to the numerous offerings of public and private respect, which have been paid to the memory of Doctor Benjamin Rush, we devote a few moments to the contemplation of the professional attainments, the public services, the moral and religious character, which make up the portrait of that distinguished philosopher and physician.

Doctor Rush was born on the 24th of December, 1745, on his father's estate, about twelve miles from the city of Philadelphia. His ancestors followed William Penn from England to Pennsylvania, in the year 1683. They chiefly belonged to the society of Quakers, and were all, as well as his parents, distinguished for the industry, the virtue, and the piety, characteristic of their sect. His grandfather, James Rush, whose occupation was that of a gunsmith, resided on his estate near Philadelphia, and died in the year 1727. His son John, the father of Dr. Rush, inherited both his trade and his farm, and was equally distinguished for his industry and ingenuity. He died while his son Benjamin



was yet young, but left him to the care of an excellent and pious mother, who took an active interest in his education and welfare. In a letter which I had the pleasure to receive from Dr. Rush, a short time before his death, and which was written upon his return from a visit to the tomb of his ancestors, he thus expresses the obligation he felt for the early impressions of piety he had received from his parents:

“I have acquired and received nothing from the world which I prize so highly as the religious principles I inherited from them; and I possess nothing that I value so much as the innocence and purity of their characters.”\*

But this was not the only source of that virtue and religion for which he was so eminently distinguished. His mother, as if influenced with a presentiment of the future destinies of her son, resolved to give him the advantages of the best education which our country then afforded:—For this purpose he was sent, at the early age of eight or nine years, to the West Nottingham Grammar School, and placed under the care of his maternal uncle, the Rev. Doctor Samuel Finley, an excellent scholar and an eminent teacher, and whose talents and learning afterwards elevated him to the Presidency of the College of Princeton. At this school young Rush remained five years, for the purpose of acquiring a knowledge of the Greek and Latin languages, and other branches necessary to qualify him, as preparatory for a collegiate course of study. But under the tuition and guidance of Dr. Finley, he was not only instructed in classical literature;—he also acquired what was of no less importance, and which characterized him through life—a habit of study and observation, a reverence for the christian religion, and the habitual performance of the duties it incul-

\* The letter here referred to was originally addressed, by Dr. Rush, to the Hon. John Adams, Esq. late President of the United States: from a copy of the same, sent to the author by Dr. Rush, several of the preceding interesting particulars have been taken.

cates. For his accomplished and pious instructor not only regarded the temporal, but the spiritual welfare of those committed to his care.

At the age of fourteen, after completing his course of classical studies, he was removed to the College of Princeton, then under the superintendence of President Davies, one of the most eloquent preachers and learned divines our country has produced.

At college, our pupil not only performed his duties with his usual attention and success, but he became distinguished for his talents, his uncommon progress in his studies, and especially for his eloquence in public speaking. For this latter acquirement, he was doubtless indebted to the example set before him by President Davies, whose talents as a pulpit orator were universally acknowledged, and were frequently the theme of his pupil's admiration.

Dr. Rush received the degree of bachelor of arts in the autumn of 1760, at the early age of fifteen. The next succeeding six years of his life were devoted to the study of medicine, under the direction of Dr. John Redman, at that time an eminent practitioner in the city of Philadelphia. Upon commencing the study of medicine, the writings of Hippocrates were among the very first works which attracted his attention; and, as an evidence of the early impression they made upon his mind, and of the attachment he had formed to them, let it be remembered, that Dr. Rush, when a student of medicine, translated the aphorisms of Hippocrates from the Greek into his vernacular tongue, in the seventeenth year of his age. From this early exercise he probably derived that talent of investigation, that spirit of inquiry, and those extensive views of the nature and causes of disease, which give value to his writings, and have added important benefits to the science of medicine. The same mode of acquiring knowledge which was recommended by



Mr. Locke, and the very manner of his commonplace book was also early adopted by Dr. Rush, and was daily continued to the last of his life. To his records, made in 1762, we are at this day indebted for many important facts illustrative of the yellow fever, which prevailed in, and desolated the city of Philadelphia, in that memorable year. Even in reading, it was the practice of Dr. Rush, and for which he was first indebted to his friend Dr. Franklin, to mark with a pen or pencil, any important fact, or any peculiar expression, remarkable either for its strength or its elegance. Like Gibbon, "he investigated with his pen always in his hand;"—believing with an ancient classic, that to study without a pen is to dream—"Studium sine calamo somnium."

Having with great fidelity completed his course of medical studies under Dr. Redman, he embarked for Europe, and passed two years at the University of Edinburgh, attending the lectures of those celebrated professors, Dr. Monro, Dr. Gregory, Dr. Cullen, and Dr. Black.

In the spring of 1763, after defending an inaugural dissertation "*de coctione ciborum in ventriculo*," he received the degree of doctor of medicine. In that exercise, which was written with classical purity and elegance, it was the object of Dr. Rush to illustrate, by experiment, an opinion that had been expressed by Dr. Cullen, that the aliment, in a few hours after being received into the stomach, undergoes the acetous fermentation. This fact he established by three different experiments, made upon himself; experiments, which a mind less ardent in the pursuit of truth, would readily have declined.

From Edinburgh Dr. Rush proceeded to London, where, in attendance upon the hospitals of that city, the lectures of its celebrated teachers, and the society of the learned, he made many accessions to the stock of knowledge he had already acquired.



In the spring of 1769, after visiting Paris, he returned to his native country, and immediately commenced the practice of physic in the city of Philadelphia, in which he soon became eminently distinguished.

Few men have entered the profession in any age or country with more numerous qualifications as a physician, than those possessed by Dr. Rush. His gentleness of manner, his sympathy with the distressed, his kindness to the poor, his varied and extensive erudition, his professional acquirements, and his faithful attention to the sick, all united in procuring for him the esteem, the respect, and the confidence of his fellow citizens, and thereby introducing him to an extensive and lucrative practice.

It is observed, as an evidence of the diligence and fidelity with which Dr. Rush devoted himself to his medical studies, during the six years he had been the pupil of Dr. Redman, that he absented himself from his business but two days in the whole of that period of time. I believe it may also be said, that from the time he commenced the practice of medicine to the termination of his long and valuable life, except when confined by sickness, or occupied by business of a public nature, he never absented himself from the city of Philadelphia, nor omitted the performance of his professional duties a single day. It is also stated, that during the thirty years of his attendance as a physician to the Pennsylvania hospital, such was his punctuality, his love of order, and his sense of duty, that he not only made his daily visit to that institution, but was never absent ten minutes after the appointed hour of prescribing.

In a few months after his establishment in Philadelphia, Dr. Rush was elected a professor in the medical school which had then been recently established by the laudable exertions of Dr. Shippen, Dr. Kuhn, Dr. Morgan, and Dr. Bond. For this station his talents and education peculiarly qualified him.

As in the case of Boerhaave, such too had been the attention bestowed by Doctor Rush upon every branch of medicine, that he was equally prepared to fill any department in which his services might be required.

The professorships of anatomy, the theory and practice of physic, clinical medicine, and the materia medica, being already occupied, he was placed in the chair of chemistry, which he filled in such manner as immediately to attract the attention of all who heard him, not only to the branch he taught, but to the learning, the abilities, and eloquence, of the teacher.

In the year 1789 Dr. Rush was elected the successor of Dr. Morgan to the chair of the theory and practice of physic. In 1791, upon an union being effected between the college of Philadelphia and the university of Pennsylvania, he was appointed to the professorship of the institutes of medicine and clinical practice; and in 1805, upon the resignation of the learned and venerable Dr. Kuhn, he was chosen to the united professorships of the theory and practice of physic and of clinical medicine, which he held the remainder of his life. To the success with which these several branches of medicine were taught by Dr. Rush, the popularity of his lectures, the yearly increase of the number of his pupils, the unexampled growth of the medical school of Philadelphia, and the consequent diffusion of medical learning, bear ample testimony; for, with all due respect to the distinguished talents with which the other professorships of that university have hitherto been, and still continue to be filled, it will be admitted, that to the learning, the abilities, and the eloquence of Dr. Rush, it owes much of that celebrity and elevation to which it has attained. What Boerhaave was to the medical school of Leyden, or Dr. Cullen to that of Edinburgh, Dr. Rush was to the university of Pennsylvania.



But Dr. Rush did not confine his attention and pursuits either to the practice of medicine or to the duties of his professorship: his ardent mind did not permit him to be an inactive spectator of those important public events which occurred in the early period of his life.

The American revolution; the independence of his country; the establishment of a new constitution of government for the United States, and the amelioration of the constitution of his own particular state, all successively interested his feelings, and induced him to take an active concern in the scenes that were passing. He held a seat in the celebrated congress of 1776 as a representative of the state of Pennsylvania, and subscribed the ever memorable instrument of American independence. In 1777, he was appointed physician general of the military hospital for the middle department; and in the year 1787 he received the additional gratification and evidence of his country's confidence in his talents, his integrity, and his patriotism, by being chosen a member of the state convention for the adoption of the federal constitution.

These great events being accomplished, Dr. Rush gradually retired from political life, resolved to dedicate the remainder of his days to the practice of his profession, the performance of his collegiate duties, and the publication of those doctrines and principles in medicine which he considered calculated to advance the interests of his favourite science, or to diminish the evils of human life. In a letter which I received from him as early as the year 1794, he expresses this determination, adding, "I have lately become a mere spectator of all public events." And in a conversation on this subject, during the two last years of his life, he expressed to me the high gratification which he enjoyed in his medical studies and pursuits, and his regret that he had not at a much earlier period withdrawn his attention from all other subjects and bestowed it exclusively upon his profession.



Young gentlemen, let this declaration of that venerable character, who, like Hippocrates of old, well knew the extent of his art, and the comparative shortness of human life, impress your minds with the duties before you; let it teach you, too, the value of time, that it may not be occupied in those pursuits which are unconnected with science or your profession; and, especially, that it be not wasted in idle and unprofitable amusements; for, of the physician it is not enough to say,

“That here he liv’d, or here expired.”

POPE.

Such was the attachment of Dr. Rush to his profession, that speaking of his approaching dissolution, he remarks, “when that time shall come, I shall relinquish many attractions to life, and among them a pleasure which to me has no equal in human pursuits; I mean that which I derive from studying, teaching, and practising medicine.” But he loved it as a science; principles in medicine were the great objects of all his inquiries. He has well observed, that medicine without principles, is an humble art, and a degrading occupation; but directed by principles, the only sure guide to a safe and successful practice—it imparts the highest elevation to the intellectual and moral character of man.

But the high professional character and attainments of Doctor Rush, did not alone display themselves in his skill as a physician, or his abilities as a teacher; he was equally distinguished as a writer and an author.

The present occasion does not allow me to recite to you even the numerous subjects of his medical publications;\* much less does it afford an opportunity to review the opinions

\* For an ample and minute account of the writings of Dr. Rush, the reader is particularly referred to the excellent and instructive discourse delivered before the Medical Society of Charleston, by the Hon. David Ramsay, M. D.

they contain. In the ensuing course of lectures these will severally fall under our attention, as the various subjects to which they relate may present themselves. Permit me, however, generally to observe, that the numerous facts and principles which the writings of Dr. Rush contain, the doctrines they inculcate relative to the nature and causes of disease, and the improvements they have introduced into the practice of medicine, recommend them to your attentive perusal and study, while the perspicuity and elegance of the style in which they are written, give them an additional claim to your attention as among the finest models of composition. The same remarks are equally applicable to the epistolary stile of Dr. Rush and that of his conversation ; in both of which he eminently excelled.

Mr. Fox declared in the British House of Commons, that he had learned more from Mr. Burke's conversation than from all the books he had ever read. It may also be observed of the conversation of Dr. Rush, that such were the riches of his mind ; such was the active employment of all its faculties ; so constant was his habit of giving expression to his thoughts in an extensive correspondence, in the preparation of his public discourses, and in his daily intercourse with the world, that few persons ever left his society without receiving instruction, and expressing their astonishment at the perpetual stream of eloquence in which his thoughts were communicated.

It has frequently been the subject of surprise, that amidst the numerous avocations of Dr. Rush, as a practitioner and a teacher of medicine, that he found leisure for the composition and the publication of the numerous medical and literary works which have been the production of his pen.

Although Dr. Rush possessed by nature an active and discriminating mind, in which were blended great quickness of perception, and a retentive memory ; although he en-



joyed the benefits of an excellent preliminary and professional education, it was only by habits of uncommon industry, punctuality in the performance of all his engagements, the strictest temperance and regularity in his mode of life, that enabled him to accomplish so much in his profession, and to contribute so largely to the medical literature of his country. Dr. Rush, like most men who have extended the boundaries of any department of human knowledge; who have contributed to the improvement of any art or science, was in habits of early rising, by which he always secured what Gibbon has well denominated "*the sacred portion of the day.*"

The great moralist\* justly observes, that "to temperance every day is bright, and every hour is propitious to diligence." The extreme temperance of Dr. Rush, in like manner, enabled him to keep his mind in continual employment, thereby "setting at defiance the morning mist and the evening damp—the blasts of the east, and the clouds of the south."† He knew not that "lethargy of indolence" that follows the inordinate gratifications of the table. His *ciesto* did not consist in indulgence upon the bed or in the armed chair, to recover those powers which had been paralysed or suspended by an excessive meal, or the intemperate use of vinous or spirituous drinks.

Dr. Johnson, during his tour to the Hebrides, when fatigued by his journey, retired to his chamber and wrote his celebrated Latin ode addressed to Mrs. Thrale.‡ Dr. Rush, in like manner, after the fatigues of professional duty, refreshed his mind by the perusal of some favourite poet, some work of taste, some volume of travels, biography, or history. These were the pillows on which he sought repose.

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\* Dr. Johnson

† Boswell, vol. I. p. 260.

‡ Boswell.



But the virtues of the heart, like the faculties of his mind, were also in continued exercise for the benefit of his fellow men ; while the numerous humane, charitable, and religious associations, which do honour to the city of Philadelphia, bear testimony to the philanthropy and piety which animated the bosom of their departed benefactor, let it also be remembered, that, as with the good Samaritan, the poor were the objects of his peculiar care ; and that in the latter, and more prosperous years of his life, one seventh of his income was expended upon the children of affliction and want. Dr. Boerhaave said of the poor, that they were his best patients, because God was their paymaster.

Let it also be recorded, that the last act of Dr. Rush was an act of charity, and that the last expression which fell from his lips was an injunction to his son, ‘ Be indulgent to the poor.’

“Vale egregium academix decus ! tuum nomen mecum semper durabit ; et laudes et honores tui in æternum manebunt.” \*

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\* These words were addressed by Dr. Rush, upon his taking leave of the University of Edinburgh, to his particular friend and preceptor, Dr. Cullen. See Inaug. Diss. De Coctione Ciborum. Edin. 1769.

## II.

**OBSERVATIONS on the ORIGIN and NATURE of the YELLOW FEVER, which prevailed in Providence, Rhode Island, in the summer of 1805. In a letter to JAMES HARDIE, Esq. Secretary to the Board of Health, N. Y. from Dr. PAR-DEN BOWEN.\***

Providence, August 28th, 1809.

SIR,

Your letter of the 3d instant, written by the direction of the Board of Health of the city of New-York, requesting information of the origin and nature of the malignant fever, which then prevailed here, and a retrospective view of the fever in former years, came to hand while I was in the country, in a state of convalescence, from a fever taken, I presume, by constant attendance upon patients labouring under the fever, before their removal; and I have been compelled, since my return to town, by the pressure of business, and the time necessarily taken to procure correct information, to defer my answer till the present time, as most of the persons, from whom the information was to be derived, were scattered about the country; and I hope the Board of Health will not impute the delay to neglect, or want of respect.

I will now, without further preface, endeavour to give you as correct a statement of the fever, as the most careful in-

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\* With uncommon satisfaction we insert in the present number of the Register, the above highly interesting communication, from Dr. Bowen, an eminent physician of Rhode Island. Its appearance has been delayed until now, in order that we might gratify our readers with the perusal of the interesting document, on the same important subject, which follows the present article, and which, though for some time promised, has but lately been received. Ed.



vestigation will admit, and I hope, with the candour the importance of the subject demands.

And first, with respect to the origin of the fever. In order to investigate this point, it will be necessary to take into consideration the following circumstances, viz.

In the first place, the general state of the health of the town, and especially of that part where the fever prevailed.

2dly. The condition of the houses, wharves, docks, stores, &c. in the vicinity of the fever ; and,

3dly. The connection this district had with the shipping.

With respect to the first circumstance, the health of the town, &c.

At the time the fever made its appearance, and for a long time before, the town in general was remarkably healthy ; and this was the case more especially, with that part of the town, which was the seat of the disorder, immediately preceding its origin. For several years past, the town has been exempt from any remarkable epidemic catarrhal affection, angina, or other complaints, by many deemed the precursors of yellow fever.

2dly. Respecting the condition of the houses, wharves, docks, stores, &c. comprising the seat of the fever.

On the most careful scrutiny, it appeared that this district was remarkably clean and free from filth. There were no offensive gutters, nor accumulation of putrid animal or vegetable substances, to be found in or near it. The houses were detached from each other, generally ; and in the occupancy of families, who might vie with any equal number, in point of cleanliness, in any part of the town. The wharves and stores had nothing offensive about them, and the docks were as clean and free from any obvious putrid and noxious effluvia, or filth, as in the most cleanly part of the town ; and much more so than in some other parts, where the docks, at times, have been extremely offensive, from the noisome

stench issuing from them ; and which, at the same time, has been increased by the putrid effluvium arising from damaged beef and fish in the contiguous cellars and stores ; and yet, as far as my knowledge extends, no malignant or yellow fever has ever arisen therefrom, although these apparently formidable agents, with their combined powers, have existed in a number of cases, for several years past, that have fallen under my observation, and to such extent as to have excited very serious alarm for the consequences.

3dly. With respect to the connection of the sickly district with the shipping.

It is to be understood that the fever was confined, except in three or four cases, to be mentioned hereafter, to both sides of Water-street, extending about one hundred and thirteen yards parallel with the wharves. From the back part of the houses next the river, the distance may be about thirty-five or forty yards from the head of the wharves, and from the opposite side of the street, about eighty or ninety yards ; and it appears as a matter of fact, that all vessels from the West-Indies, and elsewhere, have been permitted, and have actually come up to the town, and unloaded their cargoes at the wharves, without cleansing or performing quarantine, until since the commencement of the fever.

And it furthermore appears, that three vessels from different parts of the West-Indies, have arrived and unloaded at the wharves within the infected district, a very little while before the fever broke out, viz. the brig Planter, from St. Croix, arrived on the 4th of July ; the brig Hiram, from Antigua, and the brig Juno, from Havanna, both arrived on the 12th of July, and the fever began in Captain Stephen Russel's family on the 19th following ; between which time and the 25th, nineteen persons more were attacked, seventeen in this district, and two living at a distance from it. At this time, the town council ordered all that part of the town



to be evacuated, and the vessels removed ; and the fever immediately ceased, except in two cases ; one of which, a son of Captain Trowbridge, occurred on the 7th, and Mr. Clifford, on the 12th of August ; the latter of whom declared to my partner, Dr. Eddy, and myself, that he was two or three times on board the brig Hiram, which vessel had been removed from her former situation, where the fever began, to the wharf back of the shop where he was employed, instead of being sent down to the quarantine ground. She has since gone to sea, and there are the strongest grounds to believe that Trowbridge had been in the infected street ; and if not, the shop where he worked was not more than thirty or forty yards from where the fever first began.

Of the two persons above mentioned, who were early attacked, and resided at a distance from the infected part, one was Captain John Warner, and the other Mr. Jos. Masury, jun. and it is perfectly well known, that both had been employed on these wharves, and had been on board the suspected vessels ; and there is no doubt but that they had the same fever the others had. Warner was quite yellow, and Masury died on the fifth day with the genuine black vomit, and other concomitant symptoms of yellow fever.

In addition to the above, I would beg leave to call the attention of the board of health to the following circumstances, viz. On the 25th of July, the order for the evacuation of the infected district, and removal of the shipping was issued, and immediately complied with, and the fever ceased, so that many families returned to their habitations about the middle of August, the very season when, in general, the yellow fever begins its ravages as an epidemic, and yet not the slightest case of fever or other sickness has appeared in this district, [August 28th,] and the town continues very healthy ; and what renders the case still more remarkable, is, that this district was in so clean a state, that no kind of alteration of

its former condition has been made in it, except that six loads of sand have been carted into one dock, and that merely because two privies were situated over it, but which were constantly washed by the ebbing and flowing of the tide, and, of course, no considerable accumulation could, or did take place. This dock was not offensive, and the house adjoining the wharf, and very near to the dock, was the only one, whose inhabitants were exempt from the fever.

It further appears by the declaration of Captain Benjamin Dexter, who had three of his family taken with the fever, that when some of these vessels pumped out their bilge water, it was so extremely offensive, that the workmen on his store were made sick, and in some of them to vomiting. And Mr. Goff declares, that the bilge-water pumped from one of these vessels was so particularly offensive, that he was obliged to shut up the doors and windows of his shop, notwithstanding his workmen [shoemakers] had been much accustomed to the smell of bilge-water.

I would further state to the board of health, that the persons attacked with the fever had been on board the suspected vessels, as well as that they lived in the vicinity of them.

With respect to the condition of the above-mentioned vessels, the following circumstances appear, viz. The brig *Planter* had two men taken sick with yellow fever on board, at St. Croix, early in the month of May, who were carried on shore, as soon as the disease was ascertained, and died; but I cannot learn that the clothing belonging to them was brought home, and the vessel underwent no cleansing, before or after her arrival.

The *Hiram* arrived on the 12th, from Antigua, and on her arrival, Mr. Church, one of her owners, says that he threw overboard twenty dollars worth of sailors' clothes, and the reason he assigned for it was, that the countenances of the



people did not look well, and he thought the air of the vessel was not good, and that part of the infection came from her.

The brig *Juno* also arrived 12th July, from Havanna, and had one or two people sick on the passage home.

All these vessels, without performing quarantine or being cleansed, immediately on their arrival, unloaded at the several wharves of the sickly district, a little before the sickness began, as before stated.

Having thus related the circumstances respecting the origin of the sickness, as far as they have come to my knowledge, I am now to reply to that part of your request respecting its nature.

When the fever first made its appearance, considering the number attacked, and in so small a compass, in the vicinity of the wharves and vessels, and very near to where the yellow fever had twice before appeared in an epidemic form, it highly excited our fears ; and when, added to these circumstances, we found them labouring under the following symptoms, rigours, violent pains in the head and eyes, back and limbs, prostration of strength, sickness at stomach, with great distress, which was a constant and universal symptom with them all, with fever, &c. we were almost confirmed in the belief of yellow fever ; but as their eyes had not that suffusion so common to that fever, and the more decided and unequivocal symptoms kept off for four or five days, and considering the earliness of the season, we still hoped that we might be mistaken, and did not make a report to the council, officially, till the fifth day, when the symptoms assumed such an aspect, as left no doubt of its real nature ; for now one patient was attacked with the black or coffee-ground vomit ; another had a livid countenance, with petechiæ ; a third turned yellow ; a fourth had black vomit, and was yellow ; a fifth had black vomit and stools ; and a sixth black vomit and stools, and profuse hemorrhage from the mouth,

stomach, &c. and all of them great sickness at the stomach.

Six persons died about the fifth and sixth day from the attack. These symptoms, connected with the suddenness of the deaths, &c. will clearly point out to any person competent to judge of the case, that it was unequivocally the yellow or malignant fever.

I will now take a retrospective view of the foregoing statement, and draw the conclusion that appears to me naturally and fairly to result from it.

It then appears that the town of Providence has enjoyed a great degree of health for several years past, and been exempt from those epidemics supposed the precursors of yellow fever. That about the 20th of July, seventeen or eighteen persons were attacked with yellow fever, in a small district, till this time remarkably healthy. That this district was very clean and free from any obvious cause of sickness about the houses, stores, docks, or wharves; but that three different vessels, from three different ports of the West Indies, had arrived at, and unloaded on, the wharves of this district, without performing quarantine, or being cleansed; that one had lost two men with yellow fever, at St. Croix; another was suspected to be infected, by the owner; and that the third had had sickness on the homeward bound passage: that the inhabitants of this district and the vessels were removed on the 26th of July, and that the fever ceased; that about the middle of August, many of the inhabitants returned to their habitations in this district; that they have been there about a fortnight, and no sickness had recurred, notwithstanding no alteration has been made in the condition of this district, except six loads of sand put into one dock, merely because two privies were over it, but which were not, in any manner, remarkably filthy; that many of the sick had been on board of the suspected vessels; and, finally,



that they had been much affected by the extreme offensiveness of the bilge water of these vessels.

From the foregoing premises, I think we may fairly infer, that the fever was the yellow or malignant fever, and that it had its origin, or stood, somehow or other, connected with one or all three of the vessels above mentioned. This is, at least, my opinion, decidedly ; and not only of the fever of this year, but in each epidemic yellow fever in this town, I think I have the most unequivocal evidence of its importation ; and even in almost every sporadic case, I have been able to trace a connection with a source of foreign origin, either at the time, or, perhaps, by knowledge of it obtained a long time after.

Two such instances have come to my knowledge lately.

Now, notwithstanding my belief that the contagion is imported, I think it proper to observe, that I also believe, that it requires some peculiar, appropriate, and to me, inexplicable condition in our atmosphere, to render it capable of propagation, either as a medium, through which the contagion may be spread, or by combining with it, and thus rendering it active. It is like tinder fitted to receive a spark of fire, and as far as this appropriate state of air extends, when saturated or contaminated with the foreign or contagious principle, so far is it capable of communicating the disease to those who inhale it, and are predisposed to it : and I am led to this conclusion from the following circumstances : The disease, I believe, generally appears first as an epidemic, or in its propagating state, near to, or about wharves and docks, and extends its influence gradually and progressively ; so that if a patient ever so bad, and even dies with it, is carried into the country, or, in the beginning of the epidemic, into a distant part of the town or city, remote from the water, he does not convey the disorder, even to those in frequent con-

tact with him : at least, this has been the case with us, and I believe is generally admitted as fact in other places.

Now, if this fever possessed the common character of other contagious diseases, it would, like them, in all situations, and in all seasons, be more or less capable of propagating its kind under these different circumstances.

What this condition of the atmosphere is, that by assimilating with the contagion, or serving as a medium to it, which renders it so destructive to the human race, I cannot pretend to say, or even conjecture : but that it is not the object of our senses, I am fully convinced, from long and much observation. The inference, however, from this hypothesis is obvious, if we cannot comprehend the condition of our atmosphere, which renders the disease capable of propagation, then we should be the more careful to prevent the foreign principle from being brought into contact with the domestic one. This, however, is a task truly peculiar, considering the thousand different ways by running articles from vessels, by clothes sent from them, by persons visiting them secretly, &c. &c. by which it may be conveyed.

Before I quit this subject, I must beg leave to call the attention of the board of health to one circumstance attending yellow fever ; a circumstance of the utmost importance in investigating its nature, and so obvious, that one would think, that the meanest capacity would comprehend it, and which, at the same time, is overlooked by many eminent and ingenious men. It is this : that the first frost, or what is called black frost, destroys the real yellow fever radically, although it may, at this time, have extended its influence ever so far ; whereas the bilious and other fevers of our country, which are said to be only grades of the yellow fever, are often extended into, and through the winter and spring. Now, it appears to me absurd to suppose, that a cause which is capable to destroy the highest grade of a fever, should be unable to



produce the same effect upon the lower degrees of it : but as we every year see, that frost radically destroys the yellow fever at once, while our other fevers continue through the winter, in many cases, the inference is plain and irresistible, that there is a specific difference between them, although there may be some symptoms in common to them all.

With respect to a retrospective view of former years, I must beg leave to refer the board of health to some documents I am about to send on to Dr. Hosack upon this subject, and which I shall request him to give them the perusal of, if they should deem them of sufficient consequence.

You will please to tender my respects to the Board of Health.

I have the honour to be, with much respect,

Your obedient servant,

PARDON BOWEN.

September 10th, 1805.

SIR,

I have been under the necessity to withhold my communication until this time, as I was informed that one of the circumstances mentioned therein, was not correct, and the persons capable of giving correct information were absent. I have this moment seen one of them, and am now able to say, that instead of the brig Juno's having one or two persons sick on the homeward bound passage, she had only one man sick or unwell several days in the Havanna, but was able to do his duty home. This vessel was also at New-Providence during her voyage.

No person is or has been sick in the district, where our fever prevailed, and the inhabitants are all returned, with but a few exceptions.

Yours, with esteem, &c.

PARDON BOWEN.

## III.

OBSERVATIONS *on the foreign origin and contagious Nature of the YELLOW FEVER, as it has prevailed in Providence, Rhode-Island, and other parts of the United States. In a letter to DAVID HOSACK, M. D. New-York, from Dr. PARDON BOWEN, Physician, Rhode-Island.*

SIR,

THE origin and nature of diseases, with their modes of operation on animal bodies, have, from the earliest history of medicine, employed the researches, and exercised the ingenuity of physicians and philosophers, in every quarter of the globe ; and notwithstanding a great mass of what are called facts, have been produced to establish their origin, and an abundance of curious and ingenious theories, framed to elucidate their nature and *modus operandi*, yet, they still remain obscured with great doubts and ambiguity ; and it is probable they will remain so in a great degree, notwithstanding all the aids furnished by the recent, numerous, and wonderful discoveries, in chemistry, anatomy, and the collateral branches of medicine.

It is true, that we often can trace a connected train or series of symptoms, and thus name a disease ; but to discover and elucidate the material or cause, or a complication and combination of causes, and their mode of operation on animal bodies, constituting a disease, is far, very far, beyond my comprehension ; and that it was also beyond that of all the theorists and system makers up to the present time, is proved, by each in succession building his own system on the abolition of that of his predecessors.





It is as difficult to conceive how the cause of a disease, be it contagious or infectious, or of whatever class you may please to designate it, operates on the living animal system, so as to produce the peculiar morbid action or excitement constituting its particular nature, as it is to comprehend the manner in which the mind, by the power of volition, operates on the muscular fibres of particular parts, to excite them into action, and produce certain determinate movements, and this without the knowledge of the animal, of even the muscles put in requisition.

This fact is continually passing in review before us ; and yet after a lapse of many thousand years, and the united researches of mankind, what do we know further respecting the mysterious manner in which the mind acts on matter ? What new thing, or new fact, has thrown a ray of light upon it, to irradiate the benighted understanding—to withdraw the impervious veil, and disclose this arcanum of nature ? None ! and, probably, mankind ever will remain in profound ignorance of it, while they retain their mortal form and nature : for only spirit, after death, can comprehend how spirit, or the vital principle, can operate on substantial forms.

Although I have said, that I conceive it impossible to comprehend the nature and *modus operandi* of diseases beyond the nosological classification of them, and that, in general, their source or origin, was involved in much obscurity ; yet I shall endeavour, by producing a series of facts, to prove the origin of one that has excited more interest, and produced more alarm, for some years past, than any that is recorded in the annals of medical science in America : I mean the yellow fever. And I wish to have it distinctly understood, that when I speak of yellow fever in the United States, it is that disorder described by Dr. Chisholm and other writers, which has prevailed in the West-Indies since the year 1793 ; and which I believe to be a different disease,



and more malignant than that which was called yellow fever before that period ; at least it appears so to me, and I have had an opportunity to view the disorder in both of the periods above alluded to ; having been surgeon of a ship in Hispaniola in the year 1782, when the disease, then called yellow fever, raged with as much violence as is usual in that climate, and seized many of the crew on ship-board, labouring under every disadvantage of foul air, and crowded so close in their hammocks, between decks, that it was difficult to get between them ; when, under these unfavourable circumstances, only seven out of more than one hundred men died.

It is now several years since the yellow fever, that terrible scourge of our maritime towns and cities, has visited the United States, at least the northern section of them ; and we can now contemplate it more calmly, and weigh the evidences respecting its origin with much more accuracy, and make up a judgment with more precision, than when our minds were agitated with the apprehension of its annual visits.

It is generally well known, how much the question respecting the origin of this fever has engaged the attention, and employed the pens of writers in medicine, and how much has been said and written on the subject by other people, without settling the point in dispute ; but as every one ought, without being biased by preconceived opinions, to make up his judgment upon any point by the preponderance of the facts and evidences brought in support of it ; so, I suppose, different persons have formed different opinions about its origin, according as the weight of evidence has inclined to the one side or the other.

There are many, I know, who are led by the opinions of others, without taking the pains of investigating facts for themselves ; and others influenced by the pride of opinion,

who, having once imbibed an erroneous idea, will never relinquish it.

For myself, I had early entertained the opinion, that the yellow fever was an imported disease; and it may appear singular to you, when I declare, that I was led to this belief by reading Dr. Rush's treatise upon the yellow fever of Philadelphia in the year 1793, to prove its domestic origin. But the history of that fever, as given by him, appears to me to warrant a belief of its foreign origin. I, however, held my mind open to conviction, to be either confirmed or changed in my opinion, as further and more conclusive evidence should appear.

And I can most conscientiously declare, that the great mass of evidence produced since that period, has fully confirmed me in the belief that the yellow fever, whenever it has appeared in this town in an epidemic form, has always been imported, as well as in every sporadic case.

To support this opinion, I must go back to the first appearance of the fever in this town, and adduce a series of facts upon which it is founded; and in order more fully to support it, I shall submit a chain of reasoning growing out of these facts, and connected with the circumstances attending them.

The first case that I saw in this country that I consider to have been the genuine yellow fever, was that of my nephew, the son of the late John I. Clark, who came through Philadelphia during the early period of the fever there, in the year 1793; from whence he arrived in this town after a short passage, was taken immediately ill, and died in a few days with what appeared to us afterwards the real yellow fever.

No other case, either in the family, or in the town, occurred, to my knowledge, in that season.

In the year 1794, several cases occurred, attended with circumstances so peculiar and strongly marked, that they



made a deep impression on my mind, and proved beyond a doubt, that they, at least, were imported, and of foreign origin.

In August of this year, (1794,) Captain Joseph Gould arrived in a schooner from North-Carolina, being himself and two more, out of three persons who comprised his crew on board, sick; they were so ill when they arrived in the river, that they could not get the vessel to the wharf; and I visited them on board, and found these three persons labouring under all the marked symptoms of yellow fever; such as great distress and sickness at stomach, yellow skin, and in one of them the black vomit; this man died and was buried in Rehoboth; but as I had pronounced it the yellow fever, the alarm spread, and only two or three persons followed the hearse at a distance.

It now became a question with me to determine how these people came by the fever: and to my repeated inquiries Capt. Gould replied, that they came from Wilmington, in North-Carolina, and that it was as healthy as usual there; and that no yellow fever, or other epidemic, prevailed in the town or neighbourhood: and I then concluded, that these cases either originated on board the vessel, or in North-Carolina, and did not stand connected with the West-India yellow fever.

It so happened, that in a few days after the arrival of the before-mentioned schooner, Capt. John Bullock arrived in another vessel, from another port in North-Carolina, very sick. I was called to him, and found him labouring under the most marked symptoms of yellow fever. He recovered; and to my inquiries answered as Capt. Gould had done, viz. that no sickness had prevailed before or at his departure, either near the river, or at the port he sailed from; and that no other person on board his vessel had been sick, or was taken with the fever afterwards. This more fully confirmed me in the opinion that this case of yellow fever also originated on

board his vessel, unconnected with the West-Indies; and, probably, I should ever have remained in this belief, if Capt. Gould, who came home in the first vessel, had not survived. Some time after his recovery, recollecting the earnestness of my inquiries respecting the circumstances of his vessel and voyage, he came to inform me of certain facts which have a material bearing on the point in dispute, and tended, as much as any thing I had become acquainted with, to establish my belief in the foreign origin of the yellow fever, and particularly its connexion with the West-Indies.

He gave me the following circumstantial information, viz. That Capt. Slocum sailed in a vessel belonging to himself and his father-in-law, Capt. John Bullock, from an infected port in the West-Indies: that he lost three of his hands with yellow fever on the homeward voyage: that he arrived at this port with a cargo of West-India produce; and his crew being most of them dead, and he himself quite indisposed, Capt. Gould went on board with another set of hands, and proceeded directly for Wilmington, in North-Carolina, where he arrived after a short passage, and discharged his cargo, and set out immediately on his return voyage; during which, he and two of his men were seized with the fever, as before related. He further informed me, that the vessel had undergone no kind of cleansing or purification, either at Providence, during the voyage, or at Wilmington.

This information unfolded the source, in the most satisfactory manner, from whence he and his crew derived their fever; but it threw no light upon the case of his father-in-law, Capt. Bullock, whose vessel had not been in the West-Indies, like the other; and the port in North-Carolina from whence she sailed was healthy, and nobody on board of her had been sick except himself; and yet his was as decided a case of yellow fever as those in the first vessel.

Capt. Gould then proceeded to disclose another fact, which



resolved every doubt, and corroborated, in the most conclusive manner, the origin of the fever in both vessels.

He stated, that Bullock and himself were joint owners of both vessels; that they sailed about the same time from different ports in North-Carolina; that they met at sea, and that Capt. Bullock went on board Capt. Gould's vessel, and staid one night; and it appeared that Capt. Bullock was attacked with yellow fever in about six days afterwards. The case, then, stands thus: Capt. Slocum arrived from a port in the West-Indies where the yellow fever prevailed; three of his hands died with it on the homeward voyage, and he was himself sick. Capt. Gould, with a fresh set of hands, went on board, without any kind of cleansing of said vessel, proceeded to Wilmington, and on his return was himself, and two of his people, seized with yellow fever. His father-in-law, Capt. Bullock, went on board his infected vessel at sea, staid on board one night, and came down with the same fever in about six days after. Thus affording the strongest possible evidence the case will admit of, of the foreign origin of this fever. How clear and connected are the series of facts, without any interruption in its links, all tending to prove this point! approaching as near to the certainty of mathematical demonstration as this kind of evidence will admit of. Nobody took the disease from these patients. And I would observe, that all the above stated facts can now be substantiated by living witnesses.

In the year 1795, I attended a person from New-York, who died with yellow fever, near the market, in a large house crowded with tenants, and under circumstances apparently favourable to its propagation, and yet nobody took it from him. He had a yellow skin, petechiæ, hemorrhage, and black vomit. The yellow fever was in New-York when he left it.

Passing over these scattered and solitary cases, I come now to the year 1797, when our first epidemic yellow fever

appeared amongst us, carrying desolation through the district where it raged, and dismay and terror through the town and country.

Here, too, the evidences of its foreign origin were so clear and conclusive, that it would appear impossible that an unprejudiced mind could withhold its assent to it. I will relate its history :

About the 4th of August, 1797, the schooner *Betsy*, belonging to Messrs. Wardwell and Coxwell, of Bristol, and commanded by Capt. Burr, arrived at this port from the West-Indies, and came to at Capt. Joseph Tillinghast's wharf, in the south part of the town, where she lay for some time. In about six days, eight persons, in different and remote parts of the town, were all attacked with a fever of a similar character, which destroyed seven of them in five or six days, and excited a universal alarm ; and the more so, considering the patients resided so far apart, rendering it thus more difficult to assign any local cause for it, and thus also preventing the inhabitants from taking the usual precautionary steps to guard against it.

At the same time these seven persons died in town, Mr. Cole, a custom-house officer belonging to Warren, twelve miles from this town, and Mr. Wimer of Rehoboth, about four miles distant, were both seized and died with the same fever in a few days after the attack, as appeared by correct information obtained from persons who witnessed their sickness. I was requested to visit both of them, but was unable to leave town on account of the sickness and alarm here.

The eight persons above alluded to in this town, were William Tillinghast and Mrs. Arnold, the wife of our town treasurer, who lived near Joseph Tillinghast's wharf, where the above-mentioned schooner *Betsy* lay, four women in John Brown's long house, in the south part of the town, some distance below this vessel, and Lemuel Pitcher, and —



Fuller, in George street, a very remote and elevated situation.

You will at once see, sir, that these persons lived at a considerable distance from each other; some near the river, some, as Pitcher and Fuller, in one of the most elevated parts of the town, Wimor in the country, and Cole in Warren. And the question will naturally arise in your mind, how it was possible, that all these people could be attacked with the same fever from one and the same source?

This, I hope, I shall prove, to your satisfaction, they did. I confess, however, on a first view, and a superficial observation of the case, it appears to be impossible. But when we come to examine all the circumstances connected with these cases, we can find in all of them the most direct connection and communication, either with the schooner at Tillinghast's wharf, or with persons or clothes of sick persons, who came home in her, or, as in the case of Mrs. Arnold, residing so near her, as to be within the sphere of her contagious influence.

In pursuing this investigation, I will first call your attention to the cases of the four women in Mr. Brown's house, a considerable distance below the vessel, and who had not been near her, and must, if they took the fever from her, have taken it indirectly, and this I shall prove to you, was the fact. Obadiah Brown, one of her crew, came home sick at the time of his landing, and went directly to this house, where his sister then lived, and carried his bedding with him. Bear in mind, sir, that this house contained nine families, comprising thirty-five souls; and it so happened, that on the next day, or the day following, while his sister was pounding the blankets on which he had lain during his sickness, in a barrel with hot water, these four, these very identical four women, came into the room from four other families in the house, and stood near, and partly

over the barrel for about half an hour during the operation, and on the fourth day thereafter, were all taken with the fever, and three of them died in four days from this period. These facts I had from the survivor, who was a member of Dr. Gano's church, and was informed, at the time, of the importance that the information she would give should be correct. And it is a powerful corroborating proof of its foreign origin, that no other persons of the numerous tenants of this house took the disease, which almost certainly would have happened, considering its crowded situation, if it had originated in, or near it.

It is true, this inference has been objected to, because the woman pounding the clothes escaped the complaint. But this is by no means a conclusive argument; for it is well known, that some are not predisposed to take the fever. And, besides, I conceive it very possible, that the powerful state of excitement she was under by so hard labour, and the perspiration she was in, might have prevented its action upon her system, or have carried it off if inhaled.

Look now at Fuller and Pitcher's cases, in George street: These, also, will tend to prove, most powerfully, that they received their fever from this same vessel, living at a great distance from the general scene of the ensuing sickness, in an elevated and airy situation: no one can suppose, or will venture to say, that causes, usually assigned to produce the disease, existed near their habitations. When a cause is sometimes known to produce a given effect, even if this effect does not seem to follow regularly the apparent cause, it is much more philosophical to explain the effect from this cause, than from an imaginary one, or from no cause at all, as was the case with these two men; but here we have a cause fully sufficient to explain the effect in the most satisfactory manner, and remove every difficulty resting upon it.



These two men, Pitcher and Fuller, worked in their shops on the head of Gifford's wharf, within seventy-four feet of the infected vessel at Tillinghast's wharf; and it is also known, that Fuller not only did work for, but was on board of her.

Wimor and Cole's cases, were, if possible, more absolute and conclusive proofs of the foreign origin of this fever, than either of the foregoing; and also, that they both derived their fever from the same source; for it can be proved, that both had been on board the infected schooner while on her passage up the river. And it would be a most extraordinary circumstance, that only one person should die in Rehoboth, and one in Warren, this season, with yellow fever, and that each of these had been on board this vessel; unless you admit the supposition that they took the fever from her.

Tillinghast not only lived near the vessel, but had been on board of her; and Mrs. Arnold resided very near, and directly opposite the wharf where she lay.

The fever by this time excited the utmost alarm and terror, both on account of its mortality, and the numbers seized with it; and it was now, after the foregoing eight cases, confined entirely to a small circle in Tillinghast, Gifford, and Arnold's houses, the three most contiguous to this vessel; and from it gradually extended, as from a central point, till its progress was finally stopped by frost; forty-two persons falling victims to its fury. Of these, sixteen died in three houses most contiguous to the vessel. And from Mr. Arnold's every soul was swept off.

I presume that it will not be denied that this was the genuine yellow fever. If, however, any doubts remain about it, I will describe the general course of its symptoms, which I think must remove them. I will take Mr. William Tillinghast's case, a journal of which I have preserved. The most prominent of his symptoms were, a yellowish flush about his

breast and armpits ; his eyes in a state of inflammation, and blood-shotten, comprehending not only the conjunctive tunic investing the globe of the eye, but also that part reflected under the eye-lids, exhibiting the appearance of a bright red colour laid over a coat of orange ; his mouth and fauces partaking of the same inflammatory symptoms with his eyes ; frequent retching, petechiæ, black vomit, and death, to close the mournful scene.

There were some circumstances connected with the question of the origin of this fever, of so singular a nature, and having so strong a bearing upon it, that I cannot forbear relating them, seeing they will assist us the better in making up a judgment about it.

The fever, in its progress, extended as far north as Capt. Benjamin Dexter's, and south, as far as Mr. Brown's long house, before mentioned, the distance of about one hundred and eighty paces. And it appears that a company followed seigning menhaden through the summer, up to the time of the fever, averaging about ten barrels three times a week, which were brought to Ashton's wharf, four houses north of Dexter's, opened, and the guts and gills thrown into the dock, some of which would be necessarily exposed, at low water, to the influence of the sun in the day time. Again ; south of this district, and four or five houses beyond where the fever extended, were situated three distilleries : the middle one occupied as a gin distillery, with which was connected a long range of hog sties, containing two hundred and fifty hogs, where, consequently, there was a combination of animal and vegetable matters, constantly under the putrefactive process in its highest state of activity, aided by heat and the crowded situation of the animals ; and from whence issued such foetid and offensive exhalations, that all the neighbourhood were incommoded, and the whole atmosphere impregnated with them. These were sources as



prolific of infection and yellow fever as the most zealous advocates of domestic origin could conjure up : but how stood the facts respecting them ? Why, the yellow fever, already existing in a central point between both, gradually extended itself toward them, till it arrived, at length, to within a few houses of them, at each extreme, and there stopt. No person employed in the fishery on the north boundary took it ; and those engaged at the other extreme in the distilleries pursued their employment through the whole course of it, without the slightest attack.

These, sir, are extraordinary circumstances, and necessarily arrest the attention of every person disposed to scrutinize facts ; and I will hazard the temerity to propound this query : Did the putrid exhalations, the mephitic gasses, and the septic acid, evolved, and continually issuing from these magazines of corruption, arrest, in any degree, the progress of the disease ? Or was it some other powerful agent that interposed a barrier to the progress of this terrible malady ? I will not presume to answer in the affirmative to the first of these queries. I cannot believe a thing so totally repugnant to the universally received opinion of mankind ; and yet I think more facts and further observations are required, before we make up a final decision about it.

Of the yellow fever of the year 1800, I shall say but little, not having it in my power to relate many circumstances from personal knowledge, as I was absent at its commencement, and during a great part of its continuance ; but I believe the foreign origin of this particular epidemic has been generally admitted, even by persons who believe in the domestic origin of almost all other cases of it. Nay, they even point out the identical chest of infected clothes brought into Carr's house, which were there opened and

washed, and from whence the fever immediately spread in every direction.

Passing over this, we come now to the fever of 1805, the third epidemic yellow fever of this town, concerning which, I shall produce facts and evidences of its origin, that I should hope would carry conviction to every mind not rendered impenetrable by preconceived opinions and prejudices. I beg first to premise, that before and at the time the fever made its appearance, the town was, in general, remarkably healthy; especially that part of it which was the seat of the disease immediately preceding its first appearance; and that the town had enjoyed a great share of health for several years back; during which no epidemic, catarrh, angina, or other complaint, the supposed precursors of yellow fever, had occurred.

Having stated these facts, I proceed to the history of this epidemic.

On the 4th of July, 1805, the brig *Planter* arrived from St. Croix; and on the 12th, following, the brig *Hiram* arrived from Antigua, and the brig *Juno* from the Havanna, and came directly up to Capt. Godfrey and Dexter's wharves, within a few rods of each other, where they unloaded without any cleansing or precautions of any kind; and I beg leave to call your attention, in a particular manner, to the above dates when these vessels arrived; and to bear in mind, also, that they came from infected parts; and that one of them, the *Hiram*, had had sickness on board: That they arrived at Godfrey and Dexter's wharves, while the town was in perfect security, and in the enjoyment of full health, on the 4th and 12th of July, and there unloaded; and then mark, that on the 19th following, the fever first appeared in Captain Dexter's house; between which time and the 25th, in the short period of seven days, seventeen persons were seized with it, in a small district immediately surrounding



these vessels ; and, also, two others, whose cases will hereafter be mentioned.

At this time, the 25th July, (six persons being now dead with the fever) the town council ordered the above-mentioned vessels, and every inhabitant within certain limits around them, removed, both sick and well ; and the fever immediately ceased, except in two instances ; those of Clifford and Trowbridge ; and Clifford declared to me, that he had been on board the *Hiram* after her removal. And there is the strongest reason to believe, that Trowbridge had been in the infected street ; and if not, it is known, that he worked within fifty or sixty yards of where the fever begun.

Of the two persons attacked, who resided at a distance from the district, one was Captain John Warner, and the other, James Masury, jun. ; both of whom had been on board the suspected vessels. This fact is not denied ; and there is no doubt they had the same fever with the others. Warner, in addition to the usual symptoms, was yellow ; and Masury died on the fifth day with black vomit, and the other concomitant symptoms of the disease ; which were in the first two or three days, rigours, violent pains in the head, eyes, back and limbs, prostration of the strength, suffused state of the eyes, sickness and distress at stomach ; this was a constant symptom ; and after three or four days, petechiæ, hemorrhages, sublivid or yellow skin, and black vomit. A bare recital of these symptoms will convince you, that this disease was the real yellow fever.

I before said, that the town council had ordered the suspected vessels, and all the inhabitants in the infected district removed, and that the fever immediately ceased ; and so complete was its eradication, that except the cases of Trowbridge and Clifford, which have been accounted for, and I hope satisfactorily, no new case occurred, although many of the inhabitants returned to their houses by the mid-

dle of August, and the remainder by the twentieth; the very period when the yellow fever generally begins its career in the United States.

When we consider also, that no alteration was made in this district, except by casting six loads of sand under two privies, situated over the water, and constantly washed by the tides, and yet find no return of the fever; whereas in every other instance, when it has assumed its epidemic form, it has continued its destructive ravages till subdued by frost, we are irresistibly led to seek some foreign and extraneous agent, armed with powers capable of producing so desolating a pestilence.

If, too, we take into consideration the local situation and circumstances of this part of the town, and its inhabitants, their houses detached from each other, clean and well ventilated, their possessors easy in their circumstances, annoyed by no foul sewers or gutters near them or the wharves, and the docks as clean and free from filth as any in the town, and much more so than in many other parts, where the fever did not appear; we are compelled to seek the cause in the vessels which had just before arrived at this very point, and unloaded without cleansing or ventilation. And when, added to this, we unite the facts of their coming from infected ports in the West-Indies, and that one of them had had sickness on board, we cannot avoid, from the clearest inductions of reason, concluding, that one, or all of them, were the cause or causes from whence the fever was derived; for unless we admit this inference, in vain shall we seek any other visible or assignable cause for it.

Before quitting the history of this particular epidemic, I will relate a circumstance of some weight, as tending to prove the remarkable exemption of the whole district from any visible cause of the disease.



After the return of the fugitives to their homes, about the middle of August, expecting, that if the fever were of local origin, it might reappear, they sat themselves to work to discover the cause, and in their investigation could find nothing in the district that could support such an opinion, except the two privies before named. These were situated on both sides of Christopher Arnold's dock; from the dock an avenue leads to the street about twenty feet wide, and eighty in length; at the end of this avenue are situated Captain Christopher Arnold and Captain Christopher Sheldon's houses, and almost directly opposite, Captain Pardon Sheldon's house; and notwithstanding the contiguity of those buildings, to the only spot supposed capable of causing the fever, not a soul in them was attacked with it. This fact proves that these privies were not the source of the disease. I had the curiosity to visit them: they were situated at the sides of the wharves over the water, and daily washed by the tides; and the most fastidious minds might have ventured to pay their devotion at those temples of Cloacina without scruple.

Having thus stated the principal facts connected with the appearance of the yellow fever in this town, that have come under my immediate observation, or been derived from unquestionable sources, and which can now be substantiated by living witnesses, I shall make some general observations, and draw such conclusions as are warranted by the facts and fair reasoning from them. And

1st. We will consider the general state of health of the town, prior to the appearance of the yellow fever that appeared in an epidemic form.

2dly. Something further of the situation of the town, respecting its connections with docks, wharves, shipping, &c. and,

3dly. With other parts of the town, combining all the supposed causes of yellow fever, but where it has never appeared, at least in an epidemic form.

With respect to the first consideration, the general state of health of the town, at, and preceding the several epidemic yellow fevers, I would observe, that in the year 1792, we had a singular epidemic for our climate; many persons became yellow, with a high saffron colour, and sometimes almost black urine, costive bowels, &c. but with neither fever or thirst. This was undoubtedly the jaundice; but what constituted its peculiarity was, that it was accompanied in many cases with petechiæ, vibices and hemorrhages, and yet it was not mortal. In only one case did it prove fatal, that I know of.

In 1794, an epidemic fever prevailed on the west side of the river, beginning, and being principally confined to the hill near Hayle's tavern, and from thence as far eastward as the high ground extended.

In 1795, another, and more extensive epidemic fever began on the west side of the river, appearing first near where the theatre now stands. These were undoubtedly the fevers of our country, having all the symptoms of our typhus fever, diversified by the peculiarity of constitution in many cases; but essentially different from the yellow fever; and the mortality was comparatively small, considering the numbers attacked.

During both these years the town was remarkably healthy on the east side of the river, as it was also in 1796, and till the yellow fever began in August, 1797; and no part of the town was more exempt from sickness during these years, than that which was the immediate seat of the yellow fever.

With respect to the yellow fever of 1800, I do not know, that any remarkable disease preceded it. I have no notes respecting the subject; but as it is generally admitted, that



this fever was not of local origin, it is less material to determine this point.

With respect to the yellow fever of 1805, I have before remarked, that preceding it for several years, and till its commencement, the town had enjoyed a remarkable degree of health.

With respect to the second consideration, as relating to the situation and connection of the districts where the fevers have prevailed, with shipping, docks, wharves, &c. I would observe :

The seat of the first fever, that of 1797, was from Mr. Godfrey's to Mr. Brown's house, opposite Captain N. Power's, on both sides of the street.

That of 1800, from Mr. William Thayer's to Thomas Sabin's ; and the last epidemic yellow fever of 1805, was very circumscribed, occupying only a small circle around Godfrey and Dexter's houses ; the three epidemics comprising a distance short of five hundred paces. These different seats of the fever, you will perceive, constitute but a small part of the town, bounding on the river : they pretty much comprise one district only, and stand more immediately connected with the shipping, than any other part of the place, and more exposed to any malignant or contagious diseases they may be infected with on their arrival.

Any one who will visit this part of the town where these fevers prevailed, or who had visited it during those periods, will seek in vain for those causes of its domestic origin which have been said to generate it. Let us examine, for instance, the seat of the yellow fever of the year 1797. View the ground gradually rising from the river up to the back street ; examine the houses from Godfrey's to John Brown's house ; see them clean, well ventilated, and detached from each other ; occupied by people in easy circumstances, and good livers ; go down to the stores and wharves, you find them

also clean and free from offensive smells ; look into the docks, they penetrate but a little way in, and are thus the more easily washed by the tides ; you see nothing in them that appears to be the cause of the fever ; with less dock effluvia than you find in many other parts of the town, where the fever has never appeared. In a more particular manner, look at, and into Mr. James Arnold's house directly opposite the infected vessel, enjoying a large open space in front, of 120 feet breadth, and reaping all the benefits of the sea breezes ; the houses on both sides, detached on the south sixty feet, and on the north eighty feet distance, and connected backward with a beautiful small meadow, extending two hundred feet eastward, in full vegetation : consider all these circumstances, and then determine, whether this is the dwelling you would have selected for the fever to exert its most mortal and concentrated power upon ; and yet here, in a most particular manner, it exhibited its utmost malignancy, leaving not a soul behind to mourn its ravages.

If it is objected to the above description of this part of the town, that Mr. John Brown's long house was an exception to it, I grant it, for here, and here alone, in the whole range of the district, was there an accumulation and combination of the causes supposed capable of originating the disease : but I have, I hope, satisfactorily accounted for the appearance of it here before, and will only observe, that after the death of the three women who died in this house in the very beginning of the fever, no other person was attacked in it.

The foregoing observations respecting the seat of the fever of 1797, as connected with the shipping, docks and wharves, the cleanly condition of the houses, the comfortable circumstances of their tenants, and the exemption of the district generally, from filth, stench, or any apparent cause of disease, will apply with equal force, to the seats of the fevers of 1800 and 1805 ; in fact, they comprise but one district of small



extent, of less than five hundred paces; the first of the fevers of each year, in part, running into that of the others, so that it is needless to detain you longer on this subject. I will only appeal to the knowledge and candour of those gentlemen present, who were here during the prevalence of the fevers; and ask them, whether at those periods, or since, while visiting in this district, they discovered, by their organs of sight or smell, or through any other channel, any of those causes assigned by the advocates of domestic origin, which appeared to them capable of generating yellow fever? And I will go further, and ask them, if they have not, in several other places in the town, seen these assigned causes existing in a high degree?

I come now to the third and last consideration, viz. that respecting other parts of the town, combining all the supposed materials and causes of the fever, and yet, where it has never appeared, at least, as an epidemic.

And, 1st. I will mention the three distilleries in the south part of the town, with their two hundred and fifty hogs, wallowing in their accumulated filth; contiguous to which, is the south dock, with its waters loaded with filth and putrifying materials, brought down by the rivulet, and emptying into it the aggregated result from the whole range of the hill east of the town.

So prolific was this source thought to be of yellow fever, that one of our most respectable citizens, in an essay on the subject, considered it a principal one. And when objections were made to this opinion, on the ground that the fevers did not appear in this neighbourhood, being at a considerable distance north of it, he broached this curious hypothesis to support his doctrine, viz. that contiguous to this sink of impurity, on its south side, rises Fox Point Hill, eighty or one hundred feet high; that the noxious exhalations ascending,

were kept condensed by this hill, till they gained the summit, when they were wafted, by the southern gales, over all the contiguous and neighbouring houses and hog pens, up to Tillinghast and Gifford's wharves, and over the infected schooner, and then descended, fraught with pestilence and desolation, upon this devoted spot.

This opinion needs no refutation.

Let us now turn our attention to other parts of the town, and see, if the above described situation could not originate the fever, whether we cannot conceive of one, so combining, in a super-eminent degree, all the assignable causes of domestic origin, that it shall absolutely compel our assent.

I will attempt this description. We will first suppose the front, or head of a dock sixty feet wide, made by a street in a populous part of the town—let this dock extend, gradually widening southeasterly, a quarter of a mile, to the channel of the river; bounded on the one hand by marshes and stagnant pond holes, and on the other, hemmed in by wharves: next let us imagine the water of this dock to have no current, in consequence of its confined situation, and to be very shallow, merely rising and falling with the tides.—Now let us again suppose the bed of this extensive dock to be a soft and miry mud, continually, during the heat of the day, discharging myriads of visible air bubbles, which, arising through the water, discharge their gas into the atmosphere; or when the water is out, into it, without this medium. Here we have got all the requisite causes and conditions for the fever that can be obtained from the river.

If, now, we can superadd equivalent causes from the land, we shall have obtained the whole groundwork and complicated machinery of domestic origin.

We will again suppose, that by every rain is washed down all the accumulated vegetable and animal substances, of more than half a mile in length, of one of the principal



streets in town, and deposited in this dock, there to be commingled with whatever had been previously collected, and exposed to the fervid rays of an almost vertical sun. We can now easily imagine, that from this magazine of congregated and heterogeneous materials, of vegetable, animal, and marine productions, shall arise exhalations, so surcharged with noisome and mephitic principles of this Pandora's box, as to fill the circumambient air, and offend, and sometimes almost to stifle the neighbouring inhabitants and passing stranger. I will only tax your indulgence with one more supposition, and shall then have the picture completed. We will conjoin to it an epidemic yellow fever constitution of the atmosphere, such as was said to prevail in the years 1797, 1800, and 1805, when the yellow fever prevailed in this town.

Having thus put in requisition, and arrayed under the most favourable circumstances, every possible cause, said by the supporters of domestic origin, to produce yellow fever; shall we not confidently expect to see all the neighbouring inhabitants swept off by the generated pestilence? and this devoted place left desolate and deserted? And how incredulous would the supporters of domestic origin be, were I to inform them, that the foregoing picture was not a fiction, but a real transcript from nature—drawn, to be sure, with feeble colours—and that the inhabitants remained harmless in the focus of this mephitic atmosphere, although their dwellings were immediately contiguous to the northwestern parts of it, and in the range of the southerly breezes, and under circumstances, where the exhalations must have acquired their maximum of power; that no yellow fever ever approached this street; every body reposing in security, and rising to pursue their usual occupations, enjoying as much health as fell to the share of the inhabitants in any other part of the town, and only wondering that people should be frightened at ideal danger.

I presume, sir, after what has been said above, I need not name *muddy dock*, to enable you to recognize the resemblance of the foregoing picture ; for there you will find every part of the description realized, except that, since the prevalence of the fever, the head of the dock has been filled up some distance off toward the channel ; and that I forgot to mention that some of the adjoining houses were built upon made land, filled in upon marsh ; another alleged cause of the fever.

If it were necessary to point out other situations, thought to be peculiarly adapted to generate an indigenous yellow fever, I would direct your attention to that part of the town extending from the bridge westward, comprising Westminster, and part of Weyborset streets, which are built almost entirely on made land, filled in upon marshy and swampy ground, and so low, that in many of them their cellars contained stagnant water, and in some it remained, through the season, a foot deep, covered with green ooze, and which rendered them totally unfit for use. On each side are a range of docks, daily bare, at ebb tide, with a bottom of deep and soft mud, partially washed by the tides, but never scoured by its current. One of these streets sends down through its whole length of half a mile, during every rain, whatever filth it may contain, which is deposited in the river, near the bridge ; and to this we may add, during some years, putrid beef and fish, deposited in cellars. This has often been a public nuisance ; and I well remember that Dr. Williams, who had the idea of domestic origin fully engrafted in his head, made a complaint to the town council about it, and was about to remove because no steps were taken to rid the town of it ; and yet no yellow fever has ever visited this part of the town, although one of the most crowded and populous districts in it. It is even one of



the most healthy parts of it. It has, in common with the low main street, on the east side of the river, extending a mile upon its margin, been generally more exempt from disease, especially fevers, than the elevated parts of the town. And this fact will appear the more extraordinary, if we take a slight general view of the town : You find it situated partly upon, and partly between, two elevated hills ; intersected by the river ; containing many wharves and docks, or receptacles, subjected to the washing down into them, of whatever is accumulated in the higher grounds, necessarily containing much filth ; and yet it is an incontrovertible fact, that the high and elevated parts of the town are much more subject to fever than the low parts ; and so much so, that it has completely confounded the established opinions of physicians and philosophers, and prostrated their theories in the dust. If any gentleman can explain the cause of this difference, I will thank him ; I have been endeavouring for many years to solve the difficulty ; but, like a man in miry clay, the greater efforts I make, the deeper I sink in perplexity ; and it only tends to prove to my satisfaction, that very often, when we talk about the origin of diseases, we know nothing about the matter.

These observations apply more particularly to the diseases of our country ; but with respect to that one called yellow fever, it appears to me, that we have abundance of evidence to believe in its foreign origin ; and that it is a disease *sui generis*, generated originally in tropical climates, and oftentimes brought into, and propagated under favourable circumstances in the United States. And I believe it requires a peculiar constitution of atmosphere, as a pabulum to support the contagion, and render it capable of reproduction : this peculiar condition is, I believe, found in sea vessels, and about salt rivers, docks, &c. but not espe-

cially dependent upon the process of putrefaction, or any known or visible property of it ; but whatever it may be, it is as tinder to the spark of fire ; and whenever the imported contagious principle comes in contact with it, the fire is kindled, the fever is lighted up, and its extent and duration will be commensurate with this peculiar constitution of the atmosphere to propagate it.

Laying aside every other consideration, there is one strong fact that proves the yellow fever totally different in its nature from our country fevers ; and which, duly considered, will put the matter in dispute forever at rest. It is, that frost destroys the yellow fever root and branch, on its first approach ; whereas, the fevers of our country, even the most violent of them, as the typhus, the angina maligna, and spotted fevers, not only continue into, and through the winter, but oftentimes are rendered much more malignant and fatal by this circumstance.

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#### IV.

*A CASE of CAROTID ANEURISM successfully treated : Communicated to Dr. DAVID HOSACK, by WRIGHT POST, Esq. Professor of Anatomy and Surgery, in the University of the State of New-York.*

PETER THOMAS, a black man, born in the West-Indies, aged thirty-five years, was admitted into the New-York hospital, January 5, 1813, with an aneurism of the carotid artery, situated immediately under, and in contact with, the angle of the jaw on the right side.

The first symptom of this disease, which was a pulsatory sensation, was felt in March, 1812 ; but no swelling was at that time visible. Soon after, on examination, a small tu-



tumour was perceptible, which increased very gradually in size, till about the beginning of November. Until this period the progress of the tumour was unattended with pain. It now began to enlarge more rapidly, accompanied by a throbbing sensation in the head, and occasional attacks of vertigo.

Previous to his admission into the hospital, he had been once bled from the arm, and blisters had been applied to the tumour, by a practitioner who appears to have been unacquainted with the complaint.

The habit of the man was full and robust, and he had never laboured under any severe indisposition. His occupation, for a considerable period before the discovery of his complaint, was that of a labourer attending upon masons; and in this capacity he was frequently obliged to carry heavy loads upon his shoulders; and was often employed at work with his head in a depending position.

The dimensions of the tumour, at the time of his admission into the hospital, were as follows,

Length,	. . . . .	6 $\frac{1}{8}$ inches.
Breadth,	. . . . .	4
Height, or projection, of the tumour from the neck,	} . . . . .	2
Half circumference of the tumour,		8 $\frac{1}{4}$

His pulse being strong and full, sixteen ounces of blood were directed to be taken from the arm, and on the following morning a purgative of sulph. sod. was administered; and he was ordered to use low diet. These means had the effect of diminishing arterial action in a considerable degree.

On the seventh of January, at a consultation of the physicians and surgeons of the hospital, it was agreed that the operation of tying the carotid artery afforded the only hope of safety in this case. The patient acquiescing in this decision, I performed the operation on the 9th, at twelve o'clock.

An external incision was made, about three inches in length, from the lower part of the tumour to within a small

distance of the clavicle, which exposed the inner margin of the sterno-mastoid muscle. The dissection was continued through the cellular texture intervening between that muscle and the sterno-hyoideus, until the sheath containing the large vessels became apparent. This being opened sufficiently to expose the vessels, the artery was carefully separated from the vein and par vagum, and a ligature, armed with a needle, was passed under it by means of an eyed probe, bent to a suitable curvature for that purpose.\* This ligature was firmly tied; and another, introduced in a similar manner, was secured about three quarters of an inch above it.† The needle with which the first ligature was armed, was then passed through the coats of the artery, and the ligature tied in the manner recommended by Mr. Cline, Jun. The artery was then divided

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\* The artery was found to be of a size considerably larger than usual, and its coats of greater thickness. Is this to be attributed to a distension of the artery arising from the difficulty of transmitting the blood through the aneurismal portion of the vessel, or to a change of structure from the aneurismal disposition extending throughout the carotid? In ascribing it to the former cause, I am supported by a similar effect having been produced on the crural artery, in a case of aneurism occasioned by the puncture of that vessel, which came under my care some years ago, and was successfully treated by adopting the mode of operating which is now in general use. The aneurism here, it will be remarked, did not arise from a diseased artery. But the artery above the aneurismal tumour, in this case, was not only to the feel before the operation considerably enlarged, but on the exposure of it for the application of the ligature, it was really so by an augmentation of at least one third of its diameter. To this explanation, however, may be opposed what takes place in other instances, where a *diminution* of capacity is the consequence of a difficult transmission of blood through an artery. Another case of femoral aneurism of the spontaneous kind, at the operation for which I was present, is in illustration of this fact. (See Dr. Hosack's case of Femoral Aneurism in the Amer. Med. & Phil. Reg. vol. iii. p. 40.) In this instance the artery, after its exposure, was scarcely perceptible by its pulsation, and it was evidently lessened in its size.

† Should it be asked here why both ligatures were not passed under the artery at the same time, as is commonly done, I answer, because in this case there was some difficulty in detaching completely the artery from its connexion posteriorly, owing to the artery being at a greater distance from the external surface than usual, and which was occasioned by the mastoid muscle being thrown considerably forward



with the bistoury. The lips of the wound were then brought into contact, and retained by strips of adhesive plaster, and a light covering of lint, kept in its place by another strip of plaster, was all the dressing that was deemed proper. Immediately after the first ligature was applied, the pulsation in the aneurism entirely ceased; but in a short time, when attentively examined, a pulsatory motion could be obscurely felt.

About three minutes after the ligature was applied, it was remarked that the pulse at the wrist indicated a sudden diminution, both of frequency and force in the action of the heart. In five minutes, however, it regained its usual standard. At this period, too, the patient complained of a pressing, or sense of weight on the right inferior extremity, and his right arm seemed relaxed and incapable of motion. The disappearance of these symptoms, however, was simultaneous with the revival of the energy of the circulation.

Three o'clock, P. M. The patient complains of oppression about the upper part of the chest, and of a pain in the right side of the head, although not as before, of the throbbing kind. He feels chilly, and his feet are cold. Skin generally of the natural temperature. Pulse seventy-two, small and feeble. Let him take a draught of aq. acet. ammon. half an ounce, and tinct. opii. lxx.; have warm applications to his

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by the large size of the aneurismal tumour, which had insinuated itself partly under this muscle at its upper portion; and I was the less solicitous to effect an entire separation at the time, from an idea that such a degree of dissection only was necessary as would allow of an easy application of the ligature, and that when this main object would be accomplished, any farther detachment of the artery might be worse than useless; as it might possibly deprive the artery of that supply of blood, which is necessary for that due adhesion of its coats, upon which the success of the operation depends. The same practice, I find, of having the artery attached at its under surface, has been adopted by others, as well to preserve a due circulation in the coats of the artery, as from an idea that the cellular membrane which connects the artery to the surrounding parts, might assist in preventing the ligature from being forced off the artery.

feet, and drink freely of tepid barley water. Six o'clock, P. M. Oppression at the breast relieved. Complains still of pain in the right side of the head, and soreness in the wound. Skin natural, and pulse full and distinct. Ten o'clock, P. M. The pain in the right side of the head continues; feels otherwise very comfortable. Temperature of the skin rather increased. Pulse seventy, full, and soft.

January 10th, ten o'clock, A. M. Complains of no pain or uneasiness, except in the head. Has slept very well during the latter part of the night. Skin natural. Pulse seventy-six, regular, and full. Let him be bled to xij. ounces. Four o'clock, P. M. Pulse eighty, and full: other symptoms much the same. Ten o'clock, P. M. Pulse eighty-four, strong, full, with some degree of hardness. Skin dry and heated. Tongue covered with a white fur. Complains of no pain. Ten ounces of blood was taken from the arm; and he was directed to continue his tepid drinks.

January 11th. Has no pain; but speaks of a stiffness and uneasiness about the throat. Pulse eighty-six, and of moderate strength. He enjoyed several hours of sleep during the latter part of the night. No alvine evacuation since the operation. Let him take tart. pot. and sod. in divided doses, till the required effect is produced. Ten o'clock, P. M. The purgative has operated freely. Pulse eighty-six. Skin heated.

January 12th. The patient early this morning, after an attack of coughing, was affected with syncope; in which state he remained several minutes; on reviving, he complained of uneasy sensations about the throat, attended with a difficulty of ejecting the excretions of the fauces. Skin cold, and covered with a copious perspiration. Pulse very frequent and feeble, and he appeared much exhausted. He was this day directed to have a more nourishing diet. The tumour does not appear as prominent as before; it has a harden-



ed feel, and the pulsation is very obscure. Ten o'clock, P. M. Pulse ninety-four, moderately full, and strong. Skin heated, but moist. Feels no pain, except in the wound.

January 13th. Has passed a comfortable night. Pulse ninety, and soft. Skin natural. He is troubled occasionally with fits of coughing, which produce pain in the throat; and this is more severely felt when he makes the effort to throw off the secreted matter from the fauces and trachea. To allay the irritation about the throat, and obviate the cough, he is directed to take tinct. opii. ten grains, in solut. glycyrrh, half an ounce, every two hours. The agitation of the parts in the vicinity of the wound, occasioned by the cough, had now destroyed the union which had in the first instance taken place; and this was the more readily effected, as the distance to which the mastoid muscle was thrown from its natural situation, by the aneurismal tumour, rendered it difficult to keep the surfaces of the wound in contact: suppuration beginning to take place from the whole surface of the wound. Let the sides of the wound be kept as near each other as is practicable, by strips of adhesive plaster, and covered lightly with simple dressings. Pulsation in the tumour almost imperceptible. Ten o'clock, P. M. Pulse ninety. Skin heated.

January 14th. Patient quite tranquil. Pulse eighty-four. Cough less troublesome. Bowels costive. Let him have the purgative repeated.

January 15th. Has passed a restless night, on account of the cough, and a pain in the right side of the head. He is, however, much better to-day. Pulse and skin natural. The wound has a healthy appearance, and suppuration is completely established.

January 16th. Slept very little last night. Let him have an anodyne of tinct. opii xl. drops, to-night.

January 17th. The patient rested well last night. His cough is still troublesome, attended with pain in the lower

part of the throat. The surface of the wound is covered with florid granulations, and the discharge is healthy. Let his anodyne be repeated to night, if necessary.

January 18th. No material alteration in the state of the patient. He took a saline cathartic with the desired effect. The anodyne to be repeated at night.

January 19th. The discharge from the wound is rather bloody, owing, probably, to the paroxysms of coughing, which still harass him.

January 20th. The patient rested unusually well last night. He complains of no pain; and the cough is much better. The discharge from the wound is again good, and the granulations are vigorous.

January 22. Cough less troublesome. The nitrate of silver was used as an escharotic to the wound.

The dimensions of the tumour, as measured to-day, were as follows :

Length, . . . . .	5 $\frac{3}{4}$ inches
Breadth, . . . . .	3 $\frac{1}{2}$
Projection, . . . . .	2
Half circumference, . . . . .	7 $\frac{3}{4}$

Pulsation still perceptible.

January 24th. The upper ligature came away with the dressings. The caustic was again applied.

January 26th. The lower ligature came away. The sore has contracted to a small size, and discharges but little.

January 28th. The patient rested ill last night. He complains of headache, and of a soreness in the tumour, which seems more tense than usual. His cough still remains, but in a mitigated degree. Ordered sulph. sod. one ounce, and a more spare diet.

January 30th. Feels considerably better.

February 2d. Complains of no pain whatever. General health good. The wound nearly healed. Pulsation in the



tumour not perceptible, except at one point, which is softer than at any other part, and it is here very indistinct. The size of the tumour this day was as follows :

Length, . . . . .	$4\frac{3}{4}$ inches
Breadth, . . . . .	$3\frac{1}{4}$
Projection, . . . . .	$1\frac{3}{4}$
Half circumference less than . . . . .	$7\frac{1}{2}$

February 4th. There is some inflammation and soreness about the wound, and he complains much of headache. Pulse and skin natural. Bowels regular. An emollient poultice was directed to be applied to the wound and part adjacent.

February 7th. The pain and soreness have ceased since the application of the poultice.

February 13th. Since the last report, has occasionally been troubled at night with a throbbing pain in the head. Upon lying down, he remarked also a singing sensation in the left ear. These symptoms were relieved by the exhibition of a saline purgative, and by maintaining his head in a more elevated position while sleeping. He, to day, complains of soreness about the wound and lower part of the tumour, which has not sensibly decreased in size since the last ad-measurement. Pulse, skin, and bowels in a natural condition. He was directed to have the cataplasm again applied.

February 22d. No soreness about the tumour. A small sinus, half an inch in depth, discovered where the operation was performed. He complains yet of occasional throbbing in the head, and there is a point near the lower part of the tumour, particularly soft and prominent, at which an obscure pulsation can still be felt.

February 26th. The sinus still continuing, and showing no disposition to heal, ordered the following as an injection.

℞. Sulph. zinc. . . . . xvj. grains.  
Aq. font. . . . . viij. ounces. *m.*

The measurement of the tumour this day, afforded the following result :

Length, . . . . .	$4\frac{3}{4}$ inches.
Breadth, . . . . .	3
Projection, . . . . .	$1\frac{1}{2}$
Half circumference, . . . . .	$6\frac{3}{4}$

March 4th. No material alteration. Let the following be used as an injection, instead of the former.

R. Sulph. cupri. . . . .	half a drachm
Aq. font. . . . .	iv. ounces. <i>m.</i>

March 11th. The strength of the injection was increased to the addition of x. grains of the sulph. cupri.

March 23d. The sinus has contracted considerably. The size of the tumour this day, was as follows :

Length, . . . . .	$4\frac{1}{4}$ inches.
Breadth, . . . . .	$2\frac{3}{4}$
Projection, . . . . .	$1\frac{1}{2}$
Half circumference, . . . . .	$6\frac{1}{2}$

A few days after this period the sinus healed, and the man made no complaint of any pain or other indisposition. He continued in the hospital till May 17th, when he was discharged.

June 5th. He called on me. I did not measure the tumour ; but judging from the appearance of it to the eye, there was an evident diminution of size, especially about the upper part ; and the whole seemed to occupy a place lower in the neck. The pulsation was now no longer discoverable.

About the last of June I accidentally met the patient again. The tumour, in point of size, had not very evidently altered. But there was a very manifest difference in the situation of it ; and of this, the patient himself was sensible ; for he observed that the motion of the head forward, was impeded by the pressure of the tumour upon the clavicle ; and there was now a considerable space between the tumour and



the base of the jaw. Another circumstance too, rendered the fact obvious, which was, the cicatrix having apparently risen upon the surface of the tumour.

From this period to the 3d of September, I heard nothing from our patient. He this day called on me, after having lost, that morning, according to his statement, two quarts of blood, in consequence of the bursting of the aneurismal tumour. His account of what had happened to him since the latter end of June, was, that soon after he last saw me, the tumour began to enlarge and grow painful, and that it continued to increase till the rupture of it took place. Under these circumstances, I advised him to go again into the hospital, which he assented to, and the following occurrences are reported by the house surgeon.

September 3d. The tumour nearly twice as large as at the time of the operation, tense, and painful to the touch. The lint and bandage which had been applied to stop the bleeding, were not removed.

September 4th. Another small opening appeared behind the first one, from which was discharged a small quantity of pus mixed with blood.

September 5th. The dressing which had been applied to the first opening to check the hemorrhage, was this morning removed, without any discharge of blood succeeding.

September 10th. He lost about four ounces of blood from the ulcerated surface. The size of the tumour is not perceptibly diminished. An obscure pulsation is discoverable at two points. He complains of some difficulty in swallowing.

September 14th. The tumour appears rather smaller, and is not so tense and painful; the opening is increased from ulceration of the integuments, and the discharge is of a dark colour and foetid. Pulsation is now to be felt only at one point, and is very obscure.

September 20th. No pulsation can be perceived. The quantity and foetor of the discharge increased. A probe introduced into the posterior opening, passes easily to the bottom of the sac.

September 23d. He complains of a throbbing pain in the head and tumour; the tumour very painful upon pressure, and is attended with an unusual degree of heat. Pulse full and frequent. A saline purgative and low diet was prescribed, which relieved these symptoms.

September 24th. To correct the foetor of the discharge, as well as to change the disposition of the part, a yeast poultice was applied.

September 25th. A profuse hæmorrhage occurred this afternoon, and before it was stopped he lost upward of two quarts of blood. This bleeding was checked by pressure made with dry sponge and bandage. This dressing was not removed till it was loosened by the copious discharge.

October 1st. No material change has taken place since the last report.

October 8th. The tumour is increased in size, is extremely painful to the touch, and very tense. He complains of great difficulty in swallowing and in breathing. He has some fever. The poultice was again applied.

October 11th. He is much better. The tension and size of the tumour diminished.

October 20th. The size of the tumour is rapidly diminishing. Let the poultice be omitted.

October 22d. This morning at 4 o'clock, a hæmorrhage again occurred, and he lost thirty ounces of blood. By this, and his former losses of blood, he was much debilitated. His pulse was scarcely perceptible; tremulous, and occasionally intermittent. Rest, in a recumbent posture, was strictly enjoined.



October 25th. His pulse continues feeble and frequent, though he is considerably better.

October 29th. He is rapidly recovering from his debility, and is again enabled to take his usual exercise about the house. Portions of coagulated blood are discharged, with an increased quantity of the dark coloured matter before mentioned. His pulse still small, but not so frequent.

November 1st. He complains of much pain in the tumour, particularly upon pressure. Let the yest poultice be applied.

November 3d. The size of the tumour very much diminished since the last report, and not so painful. The discharge extremely copious.

November 7th. The tumour has decreased one third since the application of the poultice on the first of the month.

November 20th. The whole contents of the sac appear to be discharged, and healthy granulations are seen rising from the bottom. Let the poultice be omitted, and dress with dry lint.

November 22d. Complains of some pain in the part, which seems to be a little inflamed. Let an emollient poultice be applied.

November 24th. The inflammatory symptoms are entirely removed. Discontinue the poultice, and dress with lint as before.

November 26th. The wound much contracted, but the granulations appear rather unhealthy; the lint which was applied to them was directed to be wetted with a solution of the sulphate of copper.

From this period there was a gradual amendment till about the middle of December, when he was discharged from the Hospital, in every respect perfectly well.

*January 1, 1814.*

## V.

**OBSERVATIONS on the YELLOW FEVER of Virginia, with some REMARKS on Dr. JOHN MITCHELL'S Account of the Disease ; in a letter from the late CADWALLADER COLDEN, Esq. of New-York, to the late Dr. JOHN MITCHELL, of Virginia, dated**

Coldenham, June 8th, 1745.

Sir,

WHEN Mr. Franklin \* favoured me with a sight of your treatise on the yellow fever, I was obliged to go from home, and to be absent for some time ; and being scrupulous of detaining it, or of taking any copy of it without leave, I thought myself obliged to return it without having time to consider it, otherwise than cursorily, not doubting but that I would soon have the pleasure of seeing it in print. The pleasure I then had in reading it, was the only cause of making the remarks I then sent to Mr. Franklin, from a desire that you might have every hint that I could suggest to make your performance more perfect.

I have for many years declined the practice of physic, and any thoughts I now entertain on that subject, are only by the way of amusement, to fill up a vacant hour in a solitary part of the country ; and for this reason you can expect little else from me than mere speculations, and which must always give place to that knowledge which arises from accurate and judicious observation. What I then wrote was in an evening while I was abroad, deprived of company and conversation, and had no time to revise what I had wrote, but left it with

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\* Afterwards Dr. Franklin.



my son (a boy) to copy from my extempore scrawl, and to forward to Mr. Franklin. After I have told you this, you will the more readily believe that I did not expect so much notice to be taken of it as you have done. All that I expected was, that from these hints you would re-examine, and perhaps alter some expressions, which I thought might lead the ignorant or unwary into mistake.

Now, sir, the manner which you have taken to answer the objections which I had made, is so much to my heart, that I think myself happy in having given occasion to it; for it gives me hopes of an epistolary correspondence with Dr. Mitchell, who, (though I do not otherwise know him than by the papers Mr. Franklin transmitted to me) has gained that love and esteem, which candour and knowledge can only procure. I can promise you very little in return for the pleasure I hope from you, if you will favour me with correspondence by Mr. Franklin's means, but that I will very cheerfully serve your curiosity in every thing that is in my power.

After this I promise never to make so long a preamble, and shall begin to treat you with that philosophic freedom, which I would desire of you and all my friends on the like occasion.

I must repeat what I wrote in the paper to Mr. Franklin, that I have never seen any ill of the yellow fever, and hope I never shall, and therefore I can only speak speculatively of that distemper. When you wrote of the inflammation of the stomach, which, as you observe, (and I believe truly) is a constant concomitant of this distemper, I would advise you to distinguish it, in the most express terms, from a genuine inflammation; for if by any means it be mistaken for a genuine inflammation, such as in a pleurisy, or the inflammation of the stomach in the proper sense, it will unavoidably give occasion to dangerous mistakes in practice. If I have any notion of this distemper, (and the clearest conceptions that I have been

able to form of it are from your writings) this is far from an inflammation in the proper sense of the word, arising originally from a stagnation of the globular parts of the blood in the capillaries, but it is such a kind of inflammation as is occasioned by burning or corrosive humours applied to the parts; all your observations lead me to think so; and if this be the case, it requires a very different method of cure from that of inflammations, in the proper sense of the word.

I am still of opinion, that the inflammation and gangrene succeeding it, are entirely occasioned by an extraordinary acrimony in the bile, which has its first rise in the serous or lymphatic humours, (for I distinguish them,) and that from this acrimony, and the solution of the bile as a consequence of it, the icterus or yellow colour ensues, and indeed all the most terrible symptoms of the disease.

I readily agree, that purging by lenitives may be useful in some cases, in the winter season especially, as likewise bleeding, and this chiefly in the spring; for the same is observed in the small pox and measles. But may I be allowed to ask whether these lenitives may not act as topical applications to correct the acrimony of the bile, and to defend the coats of the stomach from it? For in the cure of these most terrible symptoms, I should expect something considerable from topical applications, such as immediately correct or blunt this acrimony, or defend the parts from it without stopping the perspiration of the volatile fiery parts by perspiration. I still must advise, to prevent mistakes in the ignorant or unwary, that the most express terms be used to signify that all evacuations, (except of the fiery parts by insensible perspiration) before the crisis of this distemper (as in the small pox and measles) are against the general rules of cure; and that however in any particular cases they may be necessary, that these are only exceptions to the general rule, occasioned by the particular circumstances of these cases.



I am far from thinking that sudorifics may with safety be used at any time in this or such like distempers. No: I take it to be a dangerous practice. I am of opinion that all fevers, but in a more particular manner contagious fevers, require a certain degree of velocity to be kept up within certain limits, if too slow or languid, or too high or rapid, that the noxious matter may separate at the proper distance, so as to be thrown off through the skin at the crisis, either by sweat or more insensible perspiration. If the velocity be too small, the noxious matter separates in the glands, whose excretories empty into the intestine and within the body, and whose juices are of animal use, and designed to re-enter the circulation. But if the velocity be too great, then no separation of the noxious matter can be made, and it is for this reason that untimely and hot sudorifics throw all into confusion. The fevers require a certain period for separating and concocting the noxious matter; the want of attention to this, and the impatience to have a speedy cure, I am afraid has undone many. The period required in every kind of fever, can only be learned by observation, and likewise the limits of the velocity necessary for the separation, and concoctions afterwards of the noxious matter. This period and degree of velocity in the same distemper, is different in different climates, seasons, and constitutions, and therefore require a constant, accurate, and judicious observation.

In my opinion, the generally safe method of regulating the velocity in these malignant fevers, is not by evacuations, but by giving vent to the fiery particles by a *free perspiration*, and by such means as do not add fuel to the fire; and for this purpose diluents, impregnated with mild attenuants, and with such medicine as, from observation, have some specific virtue in correcting the acrimony of the juices, and to dispose them to concoction, have from the observation of most writers been most in use. At the same time special care must be

taken of the atmosphere which immediately surrounds the sick, as to heat and moisture; for it is impossible without this care to preserve a free perspiration; and as this is not always in our power, for this reason, as well as others, a cure is not in the physician's power. The tar water (if credit may be given to Dr. Berkeley's observation) seems to promise as much for these purposes as any thing I know; as all balsams are known to be attenuants, and to preserve from that particular acrimony which produces corruption and gangrenes, and the water impregnated with tar, is able to pass every where, and to reach the utmost recesses. It has still the further advantage of no way offending the stomach, nor does it heat or increase the fever, but allays it and thirst. These properties have been confirmed to me by some few observations which I have made, and therefore I cannot forbear recommending it to further experiment.

What you observe, sir, of the use of purging after the crisis, I am persuaded, is a very useful observation, and probably ought constantly to be done, as in the small pox, and more especially in the measles. Neither do I in the least blame your practice of purging in the beginning, by lenitives in the winter, or bleeding in the spring, or of using either of them at other seasons, in particular constitutions or emergencies; for all these are found useful in the small pox, though every one knows that the crisis is by a quite different method. All I mean is, that this practice be set forth with sufficient caution to others, who have not your skill and prudence; and you know how necessary such caution is to the practitioners in America.

Notwithstanding of my writing my opinion so largely, I believe that you and I agree in our sentiments on these diseases; but as I was exceedingly pleased with your performance, I am very desirous that you would omit nothing to make it as perfect as possible, and I submit it entirely to your judgment what I have now wrote, because your knowledge, aris-



ing from observation, is upon a much surer foundation than mine ; and I most earnestly entreat of you, that you will no longer deprive me of the pleasure, and the public of the benefit of your treatise.

I am, Sir, your most humble servant,

CADWALLADER COLDEN.

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VI.

*Additional Observations on the YELLOW FEVER of Virginia ; addressed to BENJAMIN FRANKLIN, by the late Dr. JOHN MITCHELL, F. R. S. &c.\**

IN the short account of the yellow fever, which I left with you at Philadelphia, I have not endeavoured to establish any theory, or even to make any deductions from any established theory of that, or like diseases ; but have only delivered a few matters of fact, as they occurred to me in practice, (which are chiefly or only such as I thought were either new or not well confirmed and known before,) as a foundation to build a theory upon, and on which to deduce a rational cure of this disease ; and it is such which I humbly conceive may be most pertinent to the laudable designs of your society, of promoting rather than repeating the knowledge of the arts and sciences ; nor have I either health or leisure at present,

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\* In the former part of this volume we inserted entire Dr. Mitchell's Account of the Yellow Fever of Virginia. By the publication of the present additional observations, the public are in possession of all the writings of this distinguished philosopher on this interesting subject. These observations, it seems, were intended by the author to be presented to a society for the promotion of useful knowledge, at that time existing in Philadelphia, and which afterwards was reorganized under the name of the American Philosophical Society. By a reference to the Register, vol. II. p. 203, the reader will find a copy of the original letter, relative to the formation of this society, addressed to the late Dr. Colden by Dr. Franklin.

to deduce any theory or particular applications of it, from these *data*; however, I am glad to see myself so well prevented in this by your worthy colleague, Dr. Colden, as far as relates to malignant fevers in general, in this paper which you favoured me with. But as all diseases are generally attended with some peculiar and distinguishing symptoms, whereby they differ very materially from those of the same general denomination, especially in their cure, so I shall mention the concomitants of this disease, which seem to distinguish it as much from other malignant and pestilential fevers, and are to be had as much regard to in the cure, as the eruption of pustles in the measles or small pox, or of carbuncle and buboes in the plague; for beside the general affections of the solids and fluids, we must likewise have particular regard to the symptoms which they produce in the cure of diseases.

The first of these concomitants of our yellow fever, which is so material to be regarded, is an inflammation of the stomach, or liver, or both, with the adjacent parts. This appears not only from dissections, but from all outward symptoms or appearances of the disease, to be a most constant and aggravating circumstance of it; inasmuch that I never knew any one to die in this disease, without manifest tokens of this inflammation of the stomach or adjacent parts: this, as well as the inflammation of other *viscera*, generally of the brain, it is true, sometimes happens in other fevers of this class, but not so constantly, and almost surely, as in this. The next appearance of our malignant, or rather pestilential fever, as it may be called, which ought to be regarded, is an icterus, or yellow effusion. This, it is true, has imposed upon some so far as to make them take this symptom for a cause; to take this nominal, for the real essence of the disease; whereby they reckon this fever to be entirely of the bilious kind; but it would be equally wrong, and of as bad consequence almost, in practice, to have no regard to this most fatal appearance in



the disease, as to deduce its nature solely from thence. These two constant concomitants of the disease, wherever it is severe and mortal, joined to the general state of the fluids, which is very well explained by Dr. Colden, may give us a good idea of this disease, and point out the several indications of cure. The principal of these indications, which has been so well explained by many, is sweating, or at least promoting a constant *diaphoresis*, well known to be necessary in all malignant fevers. But, alas! it is much easier to propose a general method, than to perform a cure, when we come to practice; for that accurate observer, *Sydenham*, tells us, that the method which will prove successful in one year, (not to mention particular cases) will be prejudicial in another. Thus, in the years 1737 and 1741, when this disease was epidemic in *Virginia*, the sick could not be made to sweat in the winter and spring seasons; at least, not so plentifully as was necessary to check the violence of the fever, and avert the impending inflammation; which, indeed, is very often the case, when this distemper is very severe; for you must observe, that it differs as much in degree, at different times, as the measles or small-pox does. All heating sudorifics, in these cases, bring on the inflammation, and hasten on the gangrenous state of the *viscera*; and plentiful bleeding (which I have known to be urged by some in these urging occasions) causes a no less fatal dissolution of the fluids, or mortal debility, both which are but too well known in practice, and are easily deduced from the theory of these diseases. It is upon such occasions, as you may perceive, that I recommend purging in this disease, agreeably to the practice of all physicians who have had any considerable experience in it; for there are no parts, through which the lymphatic humours (which, as Dr. Colden justly observes, are the principal seat of this distemper,) go off with more ease

and more freely, than through the glands of the *primæ viæ*. Helvet. Anim. Econ.

Another advantage, and even necessity of purging, is obvious to be perceived from the necessity of cleansing the *primæ viæ* of their feculent and corruptible contents, which is of great service, when they come to be so severely affected. When this alone is indicated, by purging it may be done without any danger of driving the humours to the bowels; for the action of lenitives is no more to be referred to purgation, than the washing of the skin is to be referred to the action of sudorifics. *Pitcairn. Dissertat. de Febr. curat.* But it is very certain, what Dr. Colden rightly inculcates, that purging in this disease, requires much medical skill and prudence, (as well as most other applications in it,) and ought not to be rashly attempted; for which reason I have been more particular in explaining the reasons of it, and wish I had leisure to be as particular in delivering the practical observations which confirm and illustrate this part of practice, and the cautions requisite in it; but in general it might be observed, that it is rather out of necessity than choice, that we have recourse to purging before, or rather, at the decline of this disease. But on the decline it is so necessary that I never knew the yellow effusion to be carried off, except in one single instance, without a purge; the reason of which appears to be the viscosity of the bile, which occasions this icterus, which cannot pass off by other outlets. Dr. Colden desires to know, if any recover after purging without sweats? I can inform him, that sometimes they do, although sweats are the most general critical evacuations of all fevers. But the miasmata of contagious fevers, seem to be so subtile, that when they are disengaged from the more viscid humours, they make their escape insensibly through the pores of the skin and other parts; by which you may see some recover suddenly and surprisingly, without the least perceptible evacuation.



As to the relapse, which Dr. Colden thinks may proceed from the sick being exposed to the cold air after the fever, you must observe, that this was not an accidental, but a constant circumstance of the disease, at least at four times, when it has been epidemic in Virginia, and as much to be expected, as the return of an intermittent fever at its stated periods, whenever care was not properly taken to prevent it. What seemed to aggravate it most, was a too plentiful or gross diet. I imagined it might proceed from some lentor of the fluids, not removed nor evacuated, on account of the extreme debility of the body, which might afford, as it were, a *nidus*, for the subtile contagious vapours; in the same manner as some people, who have a great fluidity of their humours, and free excretions, never contract any contagious disease; whilst others, whose fluids are more viscid, can hardly avoid it, and suffer most severely from them.

P. S. What I understand by the lymphatic humours being affected in this disease, is chiefly a morbid acrimony of all the serous parts of the blood, which dissolves or assimilates the globular part of the blood, whenever the circulation is languid. *Qu.* Whether the contagious vapour, which affects the blood in this manner, is not derived from the internal, rather than the external, surface of the body? and whether the affections of the bile and liver, do not proceed originally from the same cause or minera of disease: since most of the blood which is carried to the liver, and from which the bile is secerned, proceeds from the stomach, intestines, pancreas, &c. by the *venæ portarum*, very different from the other veins of the body? and whether this may not make discharges from the internal surface of the body more necessary than in like diseases of the malignant kind: since, in this fever, the morbid humours not only proceed from thence in all probability, but likewise fix there; whilst in others of the eruptive kind, as they generally are, they are thrown on the external surface?

## VII.

**OBSERVATIONS on the FEBRILE DISEASES of Savannah ;  
in a Letter to Dr. HOSACK, from JOHN LE CONTE, Esq.  
Dated,**

Woodmanston, December 18, 1809.

Sir,

I LOST no time on my arrival at Savannah, in making the necessary inquiries relative to the fevers of this country ; the result of these follow. It was with extreme difficulty I could obtain what information I have. Most of the physicians seem averse to speaking on the subject ; and what I now communicate, is chiefly derived from former observation, and from a physician of the same way of thinking as yourself. For an answer to your two first queries, I must refer you to an account of the climate and situation of Savannah, already given in the Medical Repository, by Dr. White.

The sickly season in this country usually commences about the latter end of August, or the beginning of September, and continues through the whole of the ensuing month. Although strangers, particularly Europeans, are liable to fall victims to the unhealthiness of the climate before that time, yet this is seldom the case with the natives, their constitutions being more accustomed to the extreme heat of the weather during those months ; for it must be observed, that the temperature of the air does not begin to moderate until much later in the year. The disorders most prevalent during the period before stated, are intermittents of every kind, from those of the most simple, to those of the most compound type. These sometimes run into each other, so that a patient may be seized with a tertian, which in a few days will change to a quotidian, a double tertian, or a tertian in



the form of a quotidian; and not unfrequently end in typhus. This was particularly the case this autumn; but whether from neglect, improper treatment, or some peculiar state of the atmosphere, I am unable to say. The typhus fever, as a primary disease, very seldom occurs. They have besides these, another fever, commonly called *yellow fever*, but which, I have no doubt from its symptoms and history, you will pronounce to be nothing but the bilious fever.\* I pass over any thing more that may be said on the subject of our intermittents, as I know your chief attention is directed to the other disease. When a patient is first seized, he complains of great lassitude and anxiety; headache, generally confined to the forehead and temples; not unfrequently of soreness of the flesh and bones; pain in the back, extending from the neck through the whole length of the spine; the same sensations in the legs as are experienced after severe labour, or excessive exercise; pains in the loins, stomach, breast, or spleen. These symptoms are three or four days making their approach; in others, they are hurried through in as many hours; the fever comes on, and the unhappy sufferer dies in the space of twenty-four hours. Should he not be attacked so violently, the fever commences with a vomiting of green, yellow, or black bile, in large quantities, and very offensive to the smell. After this, it increases, attended with a full, hard, and frequent pulse, from ninety to one hundred and twenty in a minute; intolerable thirst, some delirium, and a regular remission every day; the stomach being much disordered, and the pains that were before felt, still continuing.

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\* The reader will find a very interesting communication on the fevers of the southern states by Dr. Norcom, published in the Register, vol. 1. p. 17. Dr. Norcom properly discriminates between the ordinary fever which attacks the native, and the more malignant form of the same disease under which strangers, not habituated to the climate, suffer. Hence this disease is justly considered as materially different from the yellow fever of tropical climates.—Ed.

As the disorder gradually approaches its crisis, the skin and eyes become yellow; the tongue is covered with a furred coat, tinged in the middle, of the same colour with the skin. In some the eyes are a little bloodshot, but never so much as to be called inflamed; hemorrhages never occur. At the end of ten, twelve, or fourteen days, the patient either recovers or dies; but death is never attended by real black vomit. I heard of one case, in which the patient vomited up a black flaky substance, resembling coffee grounds; but as he afterwards recovered, it was found, on inquiry, that the night before his attack with fever, he had been engaged in a drunken frolick, and had received a severe blow in his right side: the substance therefore voided from his stomach was nothing but coagulated blood.

The method of cure that proves most successful, is that which you yourself adopt in the same disease at New-York. The bowels are first cleansed by emetics and gentle cathartics; and afterwards such medicines as tend to promote perspiration and lessen the violence of the fever, are administered. Bark, either by itself, or compounded with other tonics, is, I believe, seldom used, except when the patient is convalescent; and bleeding, unless it be in such small quantities only as will relieve the headache, is generally thought prejudicial. If the fever is not so violent as to prove fatal in a few hours, it is easily subdued. The fondness which many physicians have for mercury and profuse bleeding, probably destroys more than the disease would were it left to itself; hence by many it is looked upon as more dreadful than it really is. This is the substance of what I have learnt on this subject; should it give you the satisfaction you wish, I shall be highly pleased, and more than paid for any trouble it has cost me.

Yours, &c.

JOHN LE CONTE.







D<sup>r</sup> ELIHU H. SMITH.



## VIII.

*SKETCH of the Life and Character of the late Dr. ELIHU HUBBARD SMITH, of New-York.*

(With an Engraving.)

ELIHU HUBBARD SMITH was a native of Litchfield, in Connecticut, and was born in the year 1771. Having received the rudiments of knowledge at a school in Litchfield, he entered the college of New-Haven, at the early age of eleven. At this distinguished seat of learning he gave many proofs of intellectual energy, far beyond those we are accustomed to observe in one of so unripe an age. He completed his education under the particular care of the Rev. Dr. Timothy Dwight, who then presided over an academy of distinguished reputation at Greenfield, and who, upon the death of the Rev. Dr. Stiles, succeeded to the presidency of Yale College. In 1786, Mr. Smith received the degree of A. B. from the college of New-Haven. He now returned to Litchfield, and under the direction of his father, a practitioner of physic, commenced the study of medicine. In the year 1791, he resorted to Philadelphia for the purpose of attending the several courses of medical instruction delivered in that city. After this period, in 1792, he chose as his residence, Wethersfield, in Connecticut, where he entered upon the practical duties of his profession. In this place, however, much as he was respected and esteemed for his social and moral virtues, he found but little employment as physician, and consequently, in the autumn of 1793, removed to the city of New-York, where he remained until his death, in 1798.

In New-York he devoted himself with great ardour to his medical pursuits, and by his perseverance and attention,

gradually surmounted those obstacles to professional success which naturally arose from his youth, and the limited number of his acquaintance. But beside those branches of science more immediately connected with the medical profession, he cultivated with great industry almost every department of literature. His genius as a poet unfolded itself at an early age, and among the poetical productions of his juvenile pen are not a few which manifest considerable vigour of imagination, and an easy flow of numbers.

In the year 1796, the governors of the New-York Hospital elected him one of the physicians of that extensive charity, the duties of which station he discharged much to the benefit of that institution, and to the increase of his own reputation. In this year appeared his first production on a subject strictly medical, viz. "Letters to William Buel, Physician, Sheffield, Mass. on the Fever which prevailed in New-York in 1795." These letters were written at the request and for the information of Dr. Buel, and though not originally intended for the press, were at the suggestion of some friends of the author published in the "Collection of Papers on the subject of Bilious Fevers prevalent in the United States," edited by N. Webster, Esq. Shortly after this period, Dr. Smith, in conjunction with Dr. Samuel L. Mitchill, and the late Dr. Edward Miller,\* projected the publication of the New-York "Medical Repository." From the establishment of a periodical journal of this kind, in the infant state of medical and physical science in this country, he anticipated numerous important advantages to the profession of medicine and the collateral branches of knowledge; and as he was one of the most active promoters of the design, he zealously devoted the chief part of his attention to its successful accomplishment.

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\* See the life of Dr. Miller; Register, vol. 3. p. 1-8.



The chief of his writings in the Medical Repository are, his History of the Plague of Athens, vol. 1. p. 1—32; Case of Mania, successfully treated by Mercury, do. p. 174—178; Observations on the Origin of the Pestilential Fever which prevailed in the island of Grenada in the years 1793 and 1794, do. p. 459—486; On a singular Disease with which infants are sometimes affected, do. p. 501—504; The Natural History of the Elk, vol. 2. p. 163—174; On the Pestilential Diseases which appeared in the Athenian, Carthaginian, and Roman armies, in the neighbourhood of Syracuse, do. p. 367—384.

Beside the medical productions in the Repository, he published Edwin and Angelina, or the Banditti, an opera in three acts, 8vo. 1797; and in 1798, a Discourse delivered before the New-York Manumission Society, 8vo. The same year he undertook the office of editor of an American edition of Darwin's Botanic Garden; and to evince his respect for the author of this celebrated poem, he prefixed to the volume a poetic address, happily describing the rise, progress, and use of the art of printing as connected with science, and particularly its effects in spreading this botanic song from Britain to the remotest corner of the new hemisphere. This beautiful address is retained in the second American edition of the Botanic Garden, published in 1807. Beside these miscellaneous productions, he is supposed to be the author of "Andre, a tragedy in five acts, performed in New-York, March, 1798."

While thus actively employed in the discharge of the important duties of his profession, and in the cultivation of the various branches of knowledge which elevate and adorn the human character, he, in the month of September of 1798, when only in the 27th year of his age, was attacked with the yellow fever, then prevailing with great mortality in the city of New-York, to which disease he soon fell a victim. In a

communication to Dr. David Hosack, Dr. Mitchill, one of the surviving friends and colleagues of Dr. Smith, thus describes his last illness :

“ During the warm season of that pestilential year, Elihu H. Smith and myself had been associated in performing our respective duties as physicians of the New-York Hospital. We had frequent conferences on the periodical work in which he, Edward Miller, and myself, with the co-operation of Messrs. T. and J. Swords, had become engaged. We had both been favoured with fine health, and had been sustained in full enjoyment of our powers, while the prevailing distemper was destroying lives at an unusual rate around us. We had more than once observed how remarkably well we felt; and when strangers and visitors called upon us, how entirely we were capacitated to receive them and enjoy their society.

“ Among these was the accomplished and elegant Scandella.\* In the difficulty which had arisen about procuring a

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\* The following tribute to the memory of this amiable and excellent man, extracted from the Medical Repository, may with propriety be introduced in this place.

“ DIED, Sept. 16, 1798, I. B. SCANDELLA, M. D. aged 28. The fate of this gentleman was, in a remarkable degree, to be lamented. He was a native of the Venetian State. His family was opulent and high in rank. He had received the best medical education, but had consecrated his faculties to the general improvement of science, and the benefit of mankind.

“ Having resided for some time at London, in the capacity of Secretary to the Venetian Embassy, he conceived the design of visiting America. His country's service no longer demanding his attention, he proposed to gratify a liberal curiosity in surveying the principles and structure of a rising empire.

“ He first arrived at Quebec, and thence took various journeys through the southern and western districts. His personal merits secured him the esteem of the persons among us most eminent for their knowledge and talents. His candour and blameless deportment made him be regarded with peculiar tenderness by all who knew him. His chief attention was directed to agricultural improvements and projects, justly conceiving that mankind would derive most benefit from the perfection of this art.

“ Having spent two years in this country, and accomplished the purposes which brought him hither, he embarked for Europe in June, 1798. The vessel proving



lodging, this amiable gentleman apprehended some serious inconvenience. In the ardour of his friendship, Smith asked him to his own house; his distemper proved to be the reigning epidemic. It was one of the most obstinate, rapid, and indomitable cases. It advanced with such speed, that there was time but for a few visits. On the day that I called last to see Scandella, I found him overpowered by the disease, and lying a corpse upon the bed.

“ This was affecting enough; but my solicitude was exceedingly increased by learning that Smith had been sick since the preceding afternoon. He was confined to his bed in an adjoining chamber, and was wholly ignorant of the fate of Scandella. On entering the room, I roused him from the drowsy state in which he lay. I opened the inner shutters of the window, for the purpose of admitting a little more light. It was early on Sunday morning. I inquired how he was, and received for answer, (a frequent one in those days) that he was not very unwell, and would be better by-and-by. I saw, however, in a glance, enough to satisfy me, that the disorder had already made alarming progress. The suffusion of his face, and the inflamed and glassy eye, were unequivocal symptoms of danger. But when he inquired of me if it was not almost sundown, and thereby showed that he had lost the reckoning of time, I perceived that the coherence of his

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unfit for the voyage, he returned to Philadelphia, the port from which he had set out. Shortly after he came to New-York, and engaged a passage in a packet which was speedily to sail from this harbour. The detention of his baggage, which was daily expected from Philadelphia, occasioned him the loss of this opportunity. An epidemical disease had meanwhile made its appearance in both cities. Notwithstanding its greater progress and malignity in the latter city, his concern in the welfare of a helpless family, whom his departure had deprived of their only useful friend, induced him to return thither. After enduring the continual loss of rest, and exposing himself to the influence of an infected atmosphere for ten days, he set out on his return to New-York. He had scarcely arrived before symptoms of disease appeared, which, on the sixth day, terminated in death.”

mind was broken. I soon withdrew, and pronounced my apprehensions for his safety. His friend, Mr. Johnson, caused him to be immediately removed from Pine-street to his house in Greenwich-street, and every possible comfort to be administered. There Miller joined me in devising the course of treatment for our invaluable friend. There was but a remnant of time left. Smith expressed to us a desire to have the mercurial practice tried upon himself. We instantly agreed to it. Some of the strongest ointment was procured, and a nurse from the hospital was permitted to gratify her feelings, by applying it with her own hands. This task the faithful woman performed so well, that she salivated herself. But so implacable and inveterate was the disease, that the quicksilver produced no sensible operation whatever upon the patient. Black vomiting, with universal yellowness came on, and he sunk under a malady which nothing could even mitigate or retard.

“ He was interred in the ground of the presbyterian church in Wall-street, very near the spot in which another of my valuable friends, William Pitt Smith, had been buried. Miller, Johnson, and myself, with a very few others, were all that could be found, on that day of mortality and dismay, to follow his hearse.”

We shall not in this place discuss the particular merits or defects of Dr. Smith's writings. The most esteemed of his miscellaneous productions, is his Epistle to Dr. Darwin, written in the style of that poetical philosopher and physician. Of his writings strictly medical, his Letters on the Yellow Fever which prevailed in New-York, afford a favourable specimen. He was the advocate for the domestic origin and non-contagious nature of this disease, and, from a full persuasion of the correctness of his opinions, was zealous in the support of them. An examination of the facts and reasonings upon which this opinion was maintained, we at this



time purposely forbear. It was natural to expect, that the limited experience which, at that day, the practitioners of the United States possessed, relative to that epidemic, would lead many, and particularly one of the ardent mind of Dr. Smith, into erroneous opinions concerning its peculiar character, which time and repeated observation would correct. His observations on the origin of the pestilential fever of Grenada, in which he has attempted to invalidate and overthrow the account of that disorder, as published by Dr. Chisholm, it must, on all hands, be admitted, betray an irritability of temper, and a want of respect to the distinguished character of his opponent, incompatible with that line of conduct which ought ever to characterize philosophical controversy. But it is due to truth to remark, that Dr. Smith was inadvertently led into errors, founded upon the information, and arising from the malevolent instigation of a member of the council of Bulama; and that although he paid the debt to nature before he had an opportunity to retract the censures he had passed upon Dr. Chisholm, yet the surviving editors of the Repository, acquiescing in the disinterestedness of Dr. Chisholm's motives, candidly admitted the truth of his statements.\*

His histories of the Athenian Plague, and of the pestilential diseases which appeared in the Athenian, Carthaginian, and Roman armies, we have already in part examined.†

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\* "Dr. Chisholm indignantly repels the censure passed on his conduct; and, in doing this, he manifests the warmth of conscious integrity, and the irritation of offended honour. As it was never our wish to criminate the motives of that gentleman, we observe, with pleasure, the explanations offered in his defence. And we think ourselves authorized thus publicly and explicitly to apply the language of retraction, which our deceased friend had pledged himself to employ, when he declared, "I shall be as ready to withdraw the censures that I have passed upon him, should he convince me that they are unmerited, as I have been free to advance them; and in a manner equally public." See *Med. Repos.* vol. 2. p. 285.

† See the *Register*, vol. 3. p. 54—65.

Though the author's particular views, as to the nature of these diseases, is always before us, we need no other evidence than these histories to convince us that his diligence, activity, and perseverance knew no common bounds; and that, at his early age, he had explored a great extent of medical learning. His *History of the Native American Elk*, is a specimen of the accuracy with which he described natural objects; of the promptness with which he seized opportunities, and of the learning which he diffused around the subject of his inquiry.

In announcing the death of Dr. Smith, the surviving editors of the *Medical Repository* thus speak:

“As a physician, his loss is irreparable. He had explored, at his early age, an extent of medical learning, for which the longest lives are seldom found sufficient.” “The love of science and the impulse of philanthropy directed his whole professional career, and left little room for the calculations of emolument. He had formed vast designs of medical improvement, which embraced the whole family of mankind, was animated by the soul of benevolence, and aspired after every object of a liberal and a dignified ambition. He was ripe for the highest honours of his profession; his merits were every day becoming more conspicuous, and nothing but his premature fate deprived him of that extraordinary degree of public confidence which awaited a longer continuance of his life.”

In the Eulogy on the late Dr. RUSH, delivered by Professor MITCHILL, on the 3th of May, 1813, before the College of Physicians and Surgeons, in the University, New-York, the epistolary intercourse of Dr. Rush with Dr. Smith and Dr. Miller, is mentioned as one of the happy incidents of his life.

The orator then proceeded to say, “Of these two persons, thus brought to my recollection, permit me, learned associates, to make the mention which friendship inspires.



With them both, I enjoyed that virtuous and intellectual intercourse which renders an acquaintance delightful. The former possessed a mind of such rare and exquisite finish, a temper so adapted to the social condition, and a manner so delicate and refined, that few of his cotemporaries could rival him. With a diligence that left him few lost moments to regret; a method which placed every thing he knew exactly where it ought to be, and an application of his talents to do all the good in his power, he was an ornament to the time in which he lived. Difficult, indeed, would it be to find such another!

“The latter, also, my companion and fellow labourer in undertakings which, to ourselves at least, seemed useful and advantageous, was endowed with uncommon qualities. His head was a treasury of information; his heart a mine of beneficence. With a rich fund of learning, and a capacity to turn that acquirement to the best account, he shone to great advantage in the most polished circles. His professional career, both in his public capacity, and in his private walks, was the subject of such commendation, that the calls to service were almost incessant. When such excellence, with all the mildness and benignity which adorned it, was summoned away, it is no wonder that the city felt a disposition to mourn!”

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## R E V I E W.

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ART. I. REPORT, *in part*, of SAMUEL L. MITCHILL, M. D.  
*Professor of Natural History, &c. on the FISHES of*  
*New-York.* New-York. D. Carlisle. 18mo. pp. 28.  
 1814.

SINCE the settlement of this country, two hundred years ago, there has been no proper description of the fishes of New-York. Our land animals, our plants, and particularly our birds, have attracted a due degree of attention; and so, indeed, have our minerals. But the inhabitants of our waters, who afford so much pastime to the angler, so much profit to the fisherman, and so much food to every class of citizens, are almost wholly unknown to the scientific world.

Singular as this fact may appear, it is a truth no less remarkable, that the number, variety, and excellence of the New-York fishes is surpassed, perhaps, by no market whatever. In the systematic books of Europe, it is very uncommon to find New-York quoted as the native place of a single fish! Through a want of correct description and specifications, a considerable proportion of the fishes inhabiting our rivers, bays, and streams, may be considered as non-descripts, and wholly unknown to naturalists and the learned.

Very lately, however, Samuel L. Mitchill, our Professor of Natural History, &c. has undertaken to reduce our ichthyology to certainty and system. He has proceeded by examining the fresh specimens, and describing their natural characters. The common names by which the fishes were called, seemed, in the greater part of instances, to mislead.



Many of the species, too, were not known by any appellation, and had been heretofore surveyed cursorily as strange and singular creatures. A great deal remained to be done, and to perform it well, every article must be examined *de novo*, and by itself.

A Report, in part, by Dr. Mitchill, on the Fishes of New-York, came from the press, as we learn, on January 1, 1814. We possess one of the few copies which the author caused to be printed. This Report contains about seventy species, and yet he observes that it is but the beginning of his attempt. Of these enumerated species, fifty are stated as having been described from nature; fifty-four are represented as being fit for the food of man; and nearly forty are supposed not to have been noticed, or not intelligibly so, in the *general or particular histories of Fishes*, that have been published. The author has, consequently, been obliged to add classification to his description. He has accordingly invented as many *specific* names as the novel species rendered necessary.

But in going through this difficult task, Dr. M. has been obliged to do more than designate the species of fishes. He has found it necessary to constitute several new genera. For example; finding that our exquisite *blackfish*, with his four varieties, and his congener, the elegant little *begal*, could not be conveniently disposed of under any existing families, he formed a new generic term by latinizing the aboriginal name of *tautòg*, and thus gave them the title of *TAUTÒGA*. So, being unable to arrange our noble *rockfish* or *striped basse*, and his associate, the curious *weakfish*, among any other genera already extant, he has proposed a new one, which he denominates *roccus*, by as small a departure as possible from one of the popular epithets. In like manner, discovering that four species of fishes, called *perches* in our market, had none of the characters of the *PERCA*; and

feeling a disinclination to place them under the ill-defined and uncertain genus of *LABRUS*, already overloaded with species, he has proposed to distinguish them by the name of *MORONE*. Lastly, to a very hard-featured fish, bought by him, on Nov. 4th, 1813, and which he could not make out to be a *salmo*, nor an *esox*, nor any of the other voracious species, and which was remarkable for an enormous mouth armed with a prodigious number of sharp teeth, he has applied the term *STOMADON*, from the Greek words *στόμα*, mouth, and *οδούς, ὀνίλος*, teeth.—(See *Report*, p. 12.)

We are gratified in learning, that the author perseveres in the work he has so auspiciously begun. A considerable number of additional species have been already described since the first manuscript was put to press, and of those, several have the incident of novelty. The cold and ice of winter will unavoidably retard the progress of this interesting work. But with the approach of warm weather, and the arrival of the migrating tribes, there will be the means of rapid acceleration.

There is thus a prospect of possessing, not only a good catalogue of our fishes, but a faithful description of them. To this we hope there may be added, in due season, correct delineations and figures. Then every naturalist may possess his book of reference; every sportsman may carry in his pocket, the manual of diversion; each traveller who visits the stalls may compare the natural specimens with the pages of instruction; each person at a distance may gratify his curiosity, by perusing a genuine and original document; and every housekeeper, who carves for his family, will fully comprehend the subject before him.



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ART. II. *REPORT of the Committee appointed by the Medical Society of the County of Saratoga, to investigate the Nature and Causes of the late EPIDEMIC, as it prevailed in this county, together with the most successful modes of practice in the same. Published by order of the Society. Waterford. Charles Webster. 12mo. pp. 12. 1813.*

THE disease concerning which the present pamphlet is published, has already received a considerable share of attention in the different volumes of the Register. Our opinions relative to its peculiar character; the method of treatment which has been found most successful, and the principles upon which it ought to be conducted, it is therefore unnecessary, on this occasion, again to state. We have only to remark, that this interesting Report abounds in facts directly in support of the opinions which have been uniformly maintained in the Register; and if any thing were wanting to demonstrate still further the absurdity of those speculations which have been offered in support of the *exclusively bilious* nature of this disorder, that this candid and impartial essay of the Medical Society of Saratoga has furnished it.

It appears from the communications of different practitioners, received by the society, that at least four thousand cases of this epidemic have occurred in the county of Saratoga. The extensive opportunity which was thus afforded for deducing correct practical results as to the character of this disease stamp with peculiar value the present performance. Our readers cannot but be gratified with the following copious extract.

“ Although physicians who have written upon the epidemic, have from some of its prominent symptoms derived names for it, yet

none of those names fully express its character, as it has appeared with us. We therefore take the liberty of calling it the *Bilious Pneumonia*, from its being generally attended with an inflammation of the lungs, and in the last stage with an increased morbid secretion of bile.

“ The bilious pneumonia became epidemic in some towns in this county, early in December, 1812, in most others, in January, 1813. In one or two, however, agreeably to reports received, it did not appear earlier than the first of February. A number of sporadic cases appeared in different parts of the country in the latter part of October and in November, but it could not, from its frequency, or its power of converting other diseases into itself, be properly styled epidemic in any place, earlier than December.

“ It was preceded, in the eastern part of the county, by bilious intermittent and remittent fevers, diarrhoeas, dysenteries, and other complaints, arising from marsh miasma. In the western division of the county, typhus and inflammatory fevers prevailed in addition to the above.

“ The first stage commences with a cold chill, which has sometimes lasted from four, to twenty-four hours, or longer, but it generally continues from thirty minutes to two hours. This chill, which differs not essentially (except in the severity of the ague) from those which commonly precede pneumonia, is accompanied with coldness of the extremities.

“ During the continuance of the chill, the patient is generally afflicted with a violent pain in the head, back, loins, and some part of the thorax. It sometimes at the first extends to the limbs, resembling acute rheumatism; at other times to the bowels, resembling enteritis. The pain in most instances becomes fixed in some portion of the membranes of the lungs. Some physicians have stated that it is most frequently in the right side; others say in the left, and others as frequently in the one side as the other. Respiration is laborious and difficult, frequently attended with acute pain, or a sense of suffocation. The eye is watery and red, the tongue covered with a thin white pellicle, frequently tinged with yellow near the root. Some cases are noticed in which the tongue was of a fiery red



without any pellicle, but generally moist in the first days of the complaint. The patient is racked with a cough, which is at first dry and suffocating, but soon becomes harsh and deep, raising a thin tenacious mucus; on the third or fourth day the matter expectorated becomes thicker, less tenacious, and frequently striped or mixed with blood. During the cold stage the pulse is weak, small, and in some instances, where the chill continued long, imperceptible at the wrist. After the commencement of the hot stage, the pulse becomes small and oppressed, causing that sensation in the finger which is frequent in severe peripneumonia, beating between seventy and a hundred strokes in a minute. The patient feels a great anxiety and depression of spirits, but (agreeably to the report of a number of physicians) less muscular debility than is common in acute diseases. Many in the first days of the fever, who from vertigo are unable to sit up, in a recumbent position feel their strength but little impaired. There are two paroxysms of fever in twenty-four hours, that in the evening the highest. The patient restless and wakeful, often denied the refreshment of sleep till the crisis. Nausea is a common symptom, and vomiting a frequent one: the bowels on the first days of the fever for the most part are costive, the skin about the temperature common in peripneumonia, the face generally red and bloated, but in many cases pale and cadaverous.

“Second stage: when the fever did not terminate about the fifth or seventh day, by a favourable crisis, the following symptoms generally ensued; the pulse became full, soft, and weak, from ninety to one hundred and ten strokes in a minute, the tunica adnata of the eye and skin yellow, the tongue dry and coated with a dark brown, except in a few cases, where it was smooth and glazed, and of a dark red colour; heat and dryness of the skin much more considerable than in the former stage; the bowels swollen and elastic. Uncommonly large quantities of dark bile were discharged by the operation of emetics and cathartics.

“From about the first of February till the first of April, many cases of the fever in different parts of the county, as appears by the reports before us, ran a quick and rapid course, frequently pass-

ing through the first and second stage in a few hours, putting on the symptoms of the typhus gravior, in its most malignant form, and often proving mortal in four or five days.

*Treatment.*—From the reports received we find that physicians differed considerably in their methods of treating the epidemic. Some placed almost their whole reliance on copious sweats, produced by external heat; others, on an early use of opium, wine, brandy, and the bark, in as large quantities as the stomach would retain; but far the greater number recommended venesection, emetics, cathartics, and diaphoretics; keeping the patient cool, and strictly adhering to the antiphlogistic regimen. But from the whole together, with our own observations in practice, we have thought proper to recommend the following, as the most successful mode of treatment in the fever as it appeared in December, January, April, May, June and July, and in a large majority of cases in February and March, except such as early put on symptoms of malignancy.

“First—If called before the cold chill is gone, we advise to shorten it as much as possible, which is in general easily effected by some gentle stimulant, internally given, and warmth externally applied. As soon as the fever rose, where the pulse would bear it, we bled moderately; which sometimes required repeating on the second day, very rarely on the third. The loss of twenty or thirty ounces of blood, generally removed the pneumonic symptoms as perfectly as sixty or seventy have done for several winters past. After the first bleeding, if the pain in the thorax was so far relieved as to render it safe, we administered a full dose of tartarized antimony and calomel, sufficient to cause a brisk operation as an emetic and cathartic; where this was thought dangerous, calomel per se, or combined with jalap or scammony was given. As soon as the operation was over, we applied warm fomentations of vinegar or spirits over the seat of pain, and gave diaphoretics, which seldom failed to relieve the pain and produce a free perspiration, rendering the symptoms mild, and leaving little for the physicians to do, more than to continue the perspiration, and by the use of pectorals to cause a free expectoration. The diaphoretic, most highly ap-



proved by a majority of those physicians who have reported, is a powder nearly similar to Dover's. As a pectoral, digitalis and radix scilli were very useful; vinum antim. and laudanum have also been highly recommended. Frequent and severe cathartics to cleanse the stomach and bowels are absolutely necessary in every stage of the disease. Happily we have it in our power to state, that physicians have generally agreed in the opinion, that uncommonly large doses of cathartics were necessary to produce an operation; that their frequent repetition was attended with happy effects; that external heat over the local pain was very serviceable; that epispastics after the inflammatory symptoms began to subside, applied immediately over the part affected, were very useful in removing the local pain; that calomel in small doses where the congestion of the vessels of the lungs or liver was considerable, was attended with its usual good effects; but that early in the disease, as it increased the stimulus without overcoming the morbid excitement, it was of little or no use, and in some cases injurious; that sweats from external heat in the forming stage of the fever, were often useful in throwing it off, and preventing it from running a course; that after the fever was fully formed they were generally pernicious; that they were never an indifferent remedy, always beneficial or injurious; that the latter was most frequently the case, as the fever advanced through its forming state too rapidly for their being used with safety; that hemlock, another popular remedy, was generally hurtful, and that should the fever again make its appearance on the approach of winter it cannot be too strictly prohibited, as it has unquestionably been the cause of many deaths. We have no report which approves the use of hemlock, cinchona, wine, or brandy, in the first stage of the fever, but they generally agree in recommending the antiphlogistic regimen and cathartics, and most of them the use of venesection and emetics.

"In the second or bilious stage of the epidemic, the physicians, as appears by their reports, are not so well agreed. A number, whose standings are very respectable, recommend, as soon as the inflammation subsides, to introduce the bark, opium, wine, and brandy as rapidly as the stomach will bear; to avoid cathartics, and to give

enemata to keep the bowels open. And from the success with which this practice was attended, they conclude their mode of treatment must be correct. Others, equally respectable, urge, that frequent cathartics and emetics, with a continuation of diaphoretics are all that is necessary in this stage of the fever, alleging that such has been the irritable state of the muscular fibres, that they will not bear the bark, colomba, or any other considerable tonic; that they with difficulty bear wine or brandy, especially the latter; that patients are found to recover fastest under a nutritious diet, and exercise in the open air.

“ This difference may in part result from the different degrees of malignancy with which the epidemic has appeared in different districts. That the mortality has been much more considerable under the tonic and stimulating practice than under the other, cannot be denied, but this may arise from the early malignancy of the disease; for under those symptoms, every physician must acknowledge, far the greater portion of deaths have taken place, and that some malignant cases have baffled every effort of the physician under all the different methods of treatment of which we have heard.

“ About the fifteenth or twentieth of January, many cases of the fever occurred where the pulse was so weak as to forbid the use of the lancet. This species of cases continued to increase till the close of the epidemic. Some physicians say one third, others, one fourth of the whole were of this description. In other respects they required the same treatment as other cases. It further appears, that in the months of February and March there were in many parts of the county various cases which ran rapidly through the inflammatory stage into one of a high state of malignancy, scarce inferior to the plague; attended with great muscular debility, cold chills, sometimes distressing ague, violent pain in the side, breast, head, or extremities, torpor on the surface, pulse sometimes small and hard, and often slow and irregular; the tongue in the first stage dry and white, in the last brown and dark, skin dry and hot, as in other malignant diseases, breathing difficult and laborious, and a hacking cough, expectorating matter, sometimes viscid and glary, at other times resembling blood and mucus agitated



together. In these cases the patient would not bear the loss of any blood. Equal parts of tartarized antimony and calomel were found to throw off large quantities of dark and foetid bile. Friction with vinegar and Cayenne pepper, and the application of brandy and cantharides to the extremities, till perspiration was produced, were found to be serviceable. About the second or third day, brandy, and the diffusible stimulants became necessary, followed by the rad. serp. virg. senaka root, columbo, bark, quassia, &c. About the first of April, as above stated, the symptoms appeared far less malignant, and more readily yielded to medicine. By the last of that month the fever in some parts of the county disappeared. In May and the early part of June, cases of the fever prevailed in many places, but in July and August it generally lost its pneumonic symptoms. The diseases then became remittent and intermittent fevers, cholera morbus, dysenteries, and diarrhoeas, which were more prevalent in those months than they have before been, within twelve or fourteen years in this county. An unusual number of these cases put on symptoms of malignancy, but the mortality has been probably less than one in one hundred.

“Your committee would further observe, that in our opinion, the epidemic is not a new disease. We have discovered no symptoms which are uncommon in those mixed fevers which occur in the fall, spring and winter, to which the system is predisposed by the absorption of marsh miasma, and of which that state of the atmosphere, which produces pneumonic inflammation, and cold externally applied, are the exciting causes. It has not been essentially different from those peripneumonies which visited us fifteen or twenty years since, except that cases of malignancy have been more frequent, and as far as we have been able to learn, it has yielded to the same modes of treatment. The greater malignancy of the epidemic may, probably, in part be attributed to the openness of the early part of the winter, and to the freedom of the ground from frost, till near the middle of January. Among the causes which produced such an astonishing mortality, we may include the alexirpharmic or sweating practice, which was so exceedingly popu-

lar with a great share of the people, that it was with great difficulty the physician could induce his patients to adopt the antiphlogistic regimen; the unfounded prejudices which some physicians entertained against the use of the lancet, and its too copious use by others. The former either wholly neglected the inflammatory stage, or relied too implicitly on cathartics, and the latter appear to have forgotten that the synochus would shortly terminate in a synocha or typhus, and would not bear the liberal evacuations which had been absolutely necessary for the last twelve years.

"Your committee are likewise fully of the opinion, that should the fever again appear, and physicians adopt the mode of treatment here prescribed, that instead of losing one patient in five, seven, or twenty-one, they would not lose one in sixty.

"It appears from the reports before us, that the fifth, seventh, and fourteenth days, were often critical. The crisis sometimes fell on the third day, rarely on the ninth, and some cases ran beyond the fourteenth day, which last gradually wore off without any perceptible crisis.

"Your committee have learned of but one case of dissection, which was performed so long after death, that no conclusion could be safely drawn from it. The fever during its continuance had, in common with other epidemics, the power of converting all other diseases into itself, unless we except a few cases of typhus mitior, which appeared in places where the epidemic was most rife and malignant. On reflection your committee are of the opinion, that these cases are merely a variety of the prevailing complaint. The following circumstances strengthen this opinion. Many of the cases even in the same towns, bore evident symptoms of the typhus gravior, and in the city of Albany, the typhoid tendency of the fever induced a respectable physician to call the epidemic the *peripneumonia typhodes*.

"In many parts of the country a rash or scarlatina mitis was prevalent from the last of December, till the first of April, which was infectious, but principally confined to children; it was so mild as hardly to require medical aid. In those cases which ran a



course of fever, the same symptoms were observed as in the epidemic, and the same method of treatment was required. The measles and pertusis were frequent in the latter part of winter, but neither of them were generally epidemic. The latter was uncommonly mortal, frequently in children terminating in the scrofula of the mesenteric glands. It is observable, that in the winter a great number of aged people died suddenly, without much previous disease, and that there was an unusual number of deaths from phthisis pulmonalis. The only domestic remedies used for the epidemic, which have come within our knowledge, are sweats from external heats and decoctions of hemlock internally given. Both of these, as we have before stated, were highly injurious. In many instances they occasioned a rapid progress of the fever into its most malignant state, which suddenly and unexpectedly terminated in death. Even where medical aid was called, soon after their use, it was exceedingly difficult to check the strong malignancy of the disease, and the patients slowly recovered, after a long and distressing course of fever. It is the unanimous opinion of your committee, that those remedies are extremely hazardous, and cannot be used with too much caution. They ought never to be administered, unless it be in the forming state of the fever, or for a mere cold. It is a duty which humanity requires of every medical man, to impress upon the minds of the people the extreme hazard of relying upon reports from abroad, with respect to the efficacy of medicines, in any disease; he ought to inform them that a disease scarcely ever retains the same character in different districts; that for a physician to be governed by these reports, or to prescribe to the name, rather than the symptoms of a complaint, is to render himself the follower of every stupid and tale-bearing empiric; and that medicine can never be useful when administered without a due regard to the predisposing causes of the fever, which must vary with every change of situation.

“It was the intention of your committee to have made some remarks on the theory of his wide-spread and destructive epidemic; but not having a sufficient number of facts on which they could form a complete history of the disease, they chose rather to state

such information as they have been able to obtain, with such remarks as the subject suggested, than to enter the barren field of theoretical controversy."

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ART. III. *The AMERICAN NEW DISPENSATORY: containing General Principles of Pharmaceutic Chemistry; Chemical Analysis of the Articles of the Materia Medica; Pharmaceutic Operations; Materia Medica, including several new and valuable articles, the production of the United States; Preparations and Compositions. With an Appendix, and several useful tables. The whole compiled from the most approved authors, both European and American. By JAMES THACHER, M. D. Fellow of the American Academy of Arts and Sciences, and of the Massachusetts Medical Society, and Honorary Member of the Georgia Medical Society. Second Edition. Boston. T. B. Wait and Co. and C. Williams. 8vo. pp. 732. 1813.*

WHEN the American New Dispensatory was first presented to the public in 1810, it was contemplated by the author as an Essay to ascertain how far such an undertaking, having for its more immediate object the diffusing a knowledge of our indigenous vegetables, would be received and encouraged by the medical practitioners of the United States. Such has been the flattering reception which this undertaking received, that in little more than two years the whole impression of the original edition has been disposed of; and, encouraged by this unexpected patronage, Dr. Thacher has been induced to republish the work with many improvements.



Upon comparing the present with the former edition of this Dispensatory, the reader will find that the author has adhered to the arrangement which he originally adopted, and that the whole is divided into three parts: viz. first, the general principles of pharmaceutic chemistry; secondly, the classification of medicines and a view of the operation of medicines on the living system; thirdly, preparations and compositions. To these follows an Appendix, containing observations on mineral waters; on medical prescriptions; on the nature and medicinal uses of the gases; on medical electricity; on galvanism; an abridgment of Dr. Currie's Medical Reports on the use of cold water; on cold and warm bathing; and on the method of cultivating American opium; besides, tables, and a glossary of botanical terms.

It has frequently been remarked, that dispensatories and pharmacopias present exact indexes of the progressive state of medical science, inasmuch as the alterations which they undergo, and the improvements they receive, correspond, in a very great degree, with the accessions which are made to medicine and the collateral branches of physical knowledge. The observation, we believe, will hold good, whether we advert to the time when the crude performances of Avicenna and Serapion were regarded as indubitable authority on the subject of pharmacy, or bear reference to a period near our own day, when the invaluable labours of the late learned and distinguished Dr. Lewis were communicated to the world. Notwithstanding the great alterations which have been made in works of this kind, and the numerous expurgations which the materia medica has undergone, particularly in late years, it must be admitted, that even the best English dispensatories are still in many respects encumbered with articles and preparations, either too trivial and inert to entitle them to consideration, or of a nature too uncertain or corrosive to justify the employment of them in practice.

But while we think that many substances might be rejected from the list of remedies as useless, still we would recommend the greatest caution in the exercise of this principle of rejection, that we should indiscriminately throw away the good with the bad, the grain with the chaff.

Neither leisure nor disposition allows us, at the present time, minutely to examine how far the work before us is particularly entitled to commendation on account of the author having excluded a number of inactive, superfluous, and superstitious articles which have disfigured most of the preceding productions on the same branch of medical education. We, however, readily bear testimony to the great merit of his performance, and especially for the valuable and judicious matter which it embraces relative to the indigenous productions of this country. No region of the earth is more fertile and more valuable for the productions of its vegetable and mineral kingdoms than the United States, and every attempt made for the purpose of disclosing the native resources of this country, cannot fail to prove highly useful.

The following extract is taken from the preface to the second edition.

“ A large proportion of every *Materia Medica* is derived from the vegetable kingdom, and the wise author of nature, who clothes the earth with rich productions, has probably furnished every climate with the most appropriate remedies for its own peculiar diseases; and in no country, perhaps, has the divine hand been more bountiful than in our own. Foreign drugs are not at all times to be procured, are always expensive, and not unfrequently sophisticated, and some of them less efficacious than remedies derived from our own soil.

“ Some may be surprised that so few of our productions have been incorporated into medical catalogues; but this is not to be expected, until, by botanical research and inquiry, we attain a more



perfect knowledge of their virtues and properties. Of all the branches of our profession, medical botany and *materia medica* have been the least cultivated, and have made the slowest progress among men of science in New-England. Few subjects, therefore, can, at the present period, excite greater interest than systematic investigation of the medical character and properties of our native productions, and assigning them their respective rank in the *materia medica*. Every thing invites and constrains to explore the recesses of the mountains and fields; for the earth is replete with riches. Let the cultivating hand of science be extended to bring into view the hidden treasures which have so long remained unenjoyed. If the native Indians possessed a knowledge of practical botany, and formed a *materia medica* of sufficient powers to fulfil their medical purposes, what may not be expected to result when theoretical and practical botany shall be combined with accurate experiments and observations under all the advantages of modern improvements?

A correct botanical arrangement of our medicinal vegetables, distinguishing the several species of foreign plants from those that are peculiarly American, would be of the greatest utility, as the means of obviating that confusion and embarrassment so frequently experienced from the application of English names to American plants. This presents an extensive and very profitable field, inviting young candidates for medical degrees to exercise their talents and display their taste and ingenuity. The subject is inexhaustible, and every judicious theme appertaining to it will be viewed as an important acquisition, honorary to the author, facilitating his own improvement, and contributing to the great object of fabricating an American *Materia Medica*."

For the very valuable additions to the *Materia Medica* which Dr. Thacher has presented in the *New Dispensatory*, he is indebted to his own experience, the communications of practitioners in different districts of the United States, the communications in the various American periodical jour-

nals, the inaugural exercises of American graduates in medicine, the Domestic Encyclopædia, edited by Dr. Mease, the botanical account of indigenous vegetables, published by Dr. Cutler, of Boston, the Pharmacœpia of the Massachusetts Medical Society, and to the Collections towards a Materia Medica of the United States, published by Dr. Barton. These different sources of information are, doubtless, sufficiently authentic to justify the introduction of the different native remedies contained in the present work: yet it will not be denied, that our knowledge of many of them is still very imperfect; that future experiments are requisite for the successful investigation of their nature, and that future experience must determine more particularly their peculiar medicinal character. While on this subject, we may remark, that the selection of the various American substances which Dr. T. has introduced into the New Dispensatory, is highly judicious; and that he has also given great additional value to it by the clearness, precision, and distinctness which he has observed when noticing different articles, and recommending them as remedies in different disorders, and in different stages of the same disease. Exceptions to this rule might, indeed, be pointed out. For the want of this indispensable caution in not specifying more particularly the various circumstances which govern the administration of medicines, as different in the causes, in the type, and in the stages of disease, the Collections towards a Materia Medica, by Dr. Barton, are wanting in requisites the most essential to their value, and are rendered comparatively useless.

But, without dwelling upon the character of the present work, we shall conclude with recommending it as a performance highly honourable to the author, and as eminently deserving the attention of the practitioners of the United States.



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ART. IV. *The PHILOSOPHY of EXPERIMENTAL CHEMISTRY. In two volumes. By JAMES CUTBUSH, Professor of Chemistry, Mineralogy, and Natural Philosophy, in St. John's College, Philadelphia, President of the Columbian Chemical Society, &c. &c. Philadelphia. Isaac Peirce. 12mo. Vol. 1. pp. 356. Vol. 2. pp. 338. 1813.*

We are gratified with the appearance of the present work of Professor Cutbush. Though it does not appear to be particularly distinguished for any decided superiority over the common elementary works on chemistry heretofore published, it contains a large amount of the most important facts upon which chemical science is founded, with the recent discoveries and improvements which have given such interest to this branch of physical knowledge. The arrangement of the author's materials is sufficiently clear and perspicuous, and the whole, like the volumes of Accum, is rendered, in no small degree, subservient to the purposes of the operating chemist.

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ART. V. REVIEW of "*An ESSAY on the Bilious Epidemic Fever, prevailing in the State of New-York, by CHRISTOPHER C. YATES.*" *With additional remarks by A PHYSICIAN. Albany. E. and E. Hosford. 8vo. pp. 44.*

The design of the present pamphlet is to expose the errors in fact, and the absurdities in reasoning, contained in the

*Essay* published on the bilious epidemic fever which not long since prevailed in Albany. In the accomplishment of his object, the anonymous author appears to have been actuated by a sense of duty and humanity. We have read his strictures with advantage, and think the rod of correction deservedly and judiciously applied.

“ I cannot omit this opportunity (says the author in his introductory remarks) of expressing my decided disapprobation of those medical journalists who review publications of this nature without exposing their prominent defects. This unmerited indulgence gives currency to error, and stamps imperfection with a degree of importance to which it never can be entitled.”

A hint which we hope will not be lost upon some of our brother editors.

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ART. VI. *The ECLECTIC REPERTORY, and Analytical Review, Medical and Philosophical. Edited by a SOCIETY OF PHYSICIANS. Philadelphia. Thomas Dobson. 8vo. Vol. 1. pp. 536. Vol. 2. 535. Vol. 3. pp. 551.*

*The NEW ENGLAND JOURNAL of Medicine and Surgery and the Collateral Branches of Science. Conducted by a NUMBER OF PHYSICIANS. Boston. Bradford and Reed. 8vo. Vol. 1. pp. 434. Vol. 2. pp. 418.*

The titles of these periodical journals are here introduced, not with the intention of entering into any review of their contents, but solely for the purpose of earnestly recommending them to the patronage of the members of an enlightened profession. *The Eclectic Repertory of Philadel-*



phia was commenced in October, 1810, and is now arrived at the beginning of the fourth volume. The *New-England Journal* has already completed its second annual volume. These works are published quarterly; are composed partly of original and partly of selected materials; and are conducted with great judgment and ability. The *original* papers are honourable to their respective authors, and are strikingly indicative of the improved state of medical literature in this country.

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## DOMESTIC INTELLIGENCE.

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*Case of Extirpation of the Uterus ; extracted from a letter of Dr. Shecut, of Charleston, S. C. addressed to Samuel Bard, M. D. President of the College of Physicians and Surgeons of the University of New-York.*

I avail myself of the present opportunity to give you a few outlines of the history of a *perversio uteri*, and the consequent excision of that *viscus*, which I did myself the pleasure of communicating in a paper to the Literary and Philosophical Society of South Carolina, at their last meeting, and which is referred to the medical department of said society. The history itself I now consider the property of the society, and it will probably be published among their transactions; but the importance of the case makes it, together with its novelty, desirable that its leading features be extensively circulated, since it is an instance which has been doubted by many, of the possibility of a female living without that organ.

The subject of the history is a Mrs. H——y, late a laundress of this city; many years a wife, the last six a widow; was never pregnant, though of tolerable good constitution. From an accident in the year 1806, she received a violent strain, which, according to the expression, appeared as if somewhat had torn asunder in the region of her loins, which was followed by a profuse *uterine hemorrhage*. This hemorrhage afterwards became periodical and troublesome, till about the year 1810, when a *proidentia*, or partial prolapsus, occurred, which was reduced in the common way, and by a pessary was prevented from increasing. In September,



1813, I was first called to consult on her case: on examination, &c. determined the case a *scirrhus uteri*. Her constitution was greatly impaired, and her strength exhausted. The decoction of bark acidulated with sulphuric acid, was prescribed, and lenient cathartics to keep the bowels soluble. The extract of datura stramonium was also given night and morning in half grain doses. Her health appeared to be gaining from this treatment considerable advantages, although the October period was marked by a slight hemorrhage; but on the 13th of November, having neglected her aperient medicine, she became very costive, and was seized with a nausea and uncommon desire to evacuate downwards. From these efforts a profuse *uterine hemorrhage* took place, and a considerable perversion of the organ, resembling the hour-glass contraction. The *vulva* had so completely choked that viscus, whose *fundus* was now greatly distended, that it precluded the hope of success in the attempt at reduction. To restrain the hemorrhage, I gave pills consisting of two grains of opium with half a grain of the acetite of lead, one every hour or two. My attendance at this time was merely casual, she being then a patient of Dr. Doughty's; I was, however, solicited to do all I could. Finding my efforts to compress the protruded organ, so as to reduce it, in vain, I sent for Dr. Doughty, and called in my friend and preceptor, Doctor David Ramsay. However, before either of these gentlemen arrived, the patient had raised herself on the bed-vessel, and in straining to evacuate, propelled the whole body of the organ inverted into the vessel. She laid hold of it with her hand, and was in the act of drawing herself gently on the bed as I entered the room. I now considered her case desperate, and was of opinion that nothing but *excision* could afford a chance of her recovery. I however prepared a decoction of quercitron and chamomile, and applied warm flannels wrung out of the same to the tumour, and administered

an enema, by which time Dr. Ramsay arrived. On examination he confirmed my opinion, that *excision* was the only hope.

A consultation, consisting of Drs. Ramsay, Baron, sen. Glover, Denny, Doughty, and myself, took place shortly after; a diversity of opinion compelled an adjournment to the next day. A *sphacelus* had commenced about the *fundus uteri*, and the line of *demarcation* being evident, *excision instantler* was recommended; the patient earnestly requested a delay until the next morning. Every thing that could be done to favour the reduction of the tumour was still persisted in. On the morning of the 15th, a mortification had extended itself to the neck within the vagina, and *excision* was immediately performed,\* by making a ligature as far within the vagina as was practicable; and with a probe-pointed bistoury, a circular excision half an inch below the ligature was made, without any loss of blood or sensible pain to the patient. In less than twenty-four hours the ligature cast off without any sensible effect. In nine days the patient was free from every symptom of disease, and is at this time a fine jolly, buxom widow of forty-three years! The tumour was cut through in various directions, was a solid mass; weight by computation five pounds, was eleven inches from the *fundus* in a direct line to the point of section, and from fifteen to eighteen inches circumference at its greatest diameter.

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*Extract of a Letter from Dr. David Hosack, to Dr. Thomas C. James, of Philadelphia, dated New-York, March 18th, 1811.*

I will conclude this letter by stating to you, that on the first of February last I delivered a lady in this city, Mrs.

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\* By Surgeon Joseph Glover.



G—, about twenty two years of age, who had not menstruated for nearly two years before her pregnancy. The suppression, which took place about eighteen months before her marriage, was the effect of cold, occasioned by getting her feet wet at the time her menses were flowing; but prior to that suppression, her catamenia had been regular, both as to quantity and the periods of their return. About six months before her marriage, she had a very small discharge of a blackish matter from the uterus; but so inconsiderable that she states it to have been a mere show. Since her marriage, which took place in October, 1809, she has not had the least return of her catamenia, either prior to, or since her pregnancy. Her labour was in all respects natural, without any extraordinary discharge after the separation of the placenta, which also came away spontaneously. The lochial discharge continued the usual period; and she makes an excellent nurse, having plenty of milk for her child. This fact, of her proving pregnant after two years absence of the catamenia, being very unusual, and contrary to the observations of the most respectable writers, I thought might prove interesting to you as a teacher of midwifery.

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*Cultivation of the Sugar Cane.*

It appears that several of the opulent planters of the state of Georgia have directed their attention to the cultivation of the *Sugar Cane*. From the experiments already made, we are informed, on the authority of the *Massachusetts Agricultural Repository and Journal*, (no. 1. vol. 3.) it is already ascertained, that one acre of cane will yield sugar to the value of two thousand four hundred dollars, deducting the expense of cultivation, which is about four hundred dollars.

*Case of Tuberculated Liver.*

[The following extract, furnishing a brief notice of a dissection of a tuberculated Liver, is taken from a letter addressed to William Dunlap, Esq. by David Hosack, M. D. and published in Dunlap's Life of Cooke, vol. 2. The causes which induced such a morbid condition of that viscus, are equally well known as the professional eminence of the subject of it.]

(With an Engraving.)

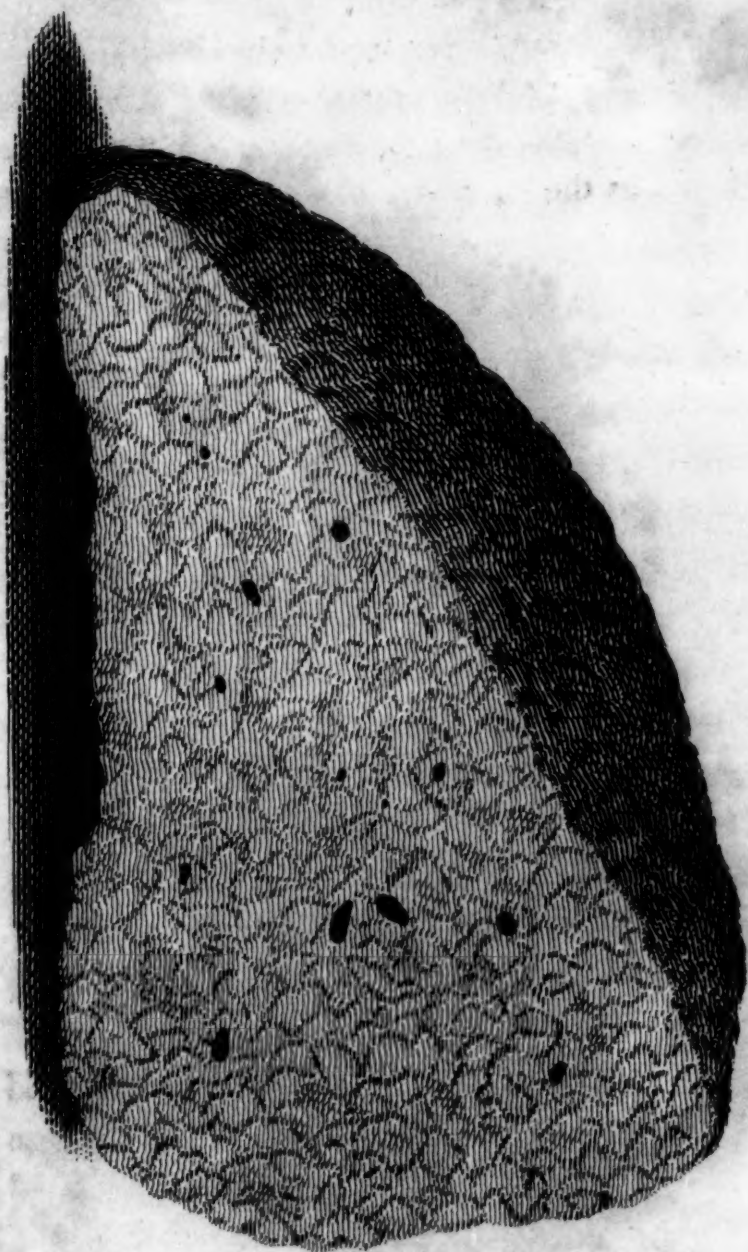
“ A few hours after his death, having obtained permission from Mrs. Cooke, accompanied by Dr. Francis, I examined the body, for the purpose of ascertaining the state of the abdominal viscera, and especially that of the liver. Upon opening the belly, we found it to contain about four quarts of water ; but the liver, to our great surprise, did not exceed the usual dimensions of that viscus ; it was, however, astonishingly hard, and of a much lighter colour than is natural to that organ ; its texture, too, was uncommonly dense, making considerable resistance to the knife ; in its internal structure it was so hard and unyielding, that very few traces of its vessels could be found, and the circulation through it had evidently long since ceased to be regularly performed : it exhibited precisely that peculiar *tuberculous* appearance which was first pointed out by Dr. Baillie of London, in his *Morbid Anatomy*.\* It also deserves to be remarked, that in the case of Mr. Cooke, as in those described by the distinguished anatomist referred to, the tubercles were not confined to the surface, but extended throughout the greater part of the substance of the liver, as I ascertained by making several sections of it in different directions. The other viscera of the abdomen exhibited no departure from their natural condition, either in their structure or appearance.”

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\* See Baillie's engravings, p. 101, 2.



*Section of a Tuberculated Liver.*







*Observations on the Weather of the City of New-York, for the months of October, November, and December, 1813.*

OCTOBER.

The temperature of the weather for the month of October was such as we are accustomed to experience at this season; though upon the whole the number of cloudy days, and those on which rain fell, was greater than is generally observed. The highest degree of heat, as indicated by Fahrenheit's thermometer, was on the 27th, when the mercury stood at 7 A. M. at 57; at 3 P. M. at 65; and at 7 P. M. at 60: the lowest degree on the 12th, when it stood at 7 A. M. at 37; at 3 P. M. 46; at 7 P. M. at 42.\* The greatest quantities of rain fell on the 1st, 2d, 7th, 15th, 16th, 17th, (accompanied with thunder) and 27th. The wind was not unfrequently from the southward; at other times N. E.

NOVEMBER.

The weather of this month was for the most part mild and pleasant. The thermometer frequently stood as high as 50, at 7 A. M.; at 3 P. M. at 58; and at 7 P. M. at 52 degrees. The lowest range of the thermometer for the whole day, was on the 15th, when the mercury stood, at 7 A. M. at 31; at 3 P. M. at 31; and at 7 P. M. at 30. We had a light fall of snow on the 12th and on the 14th, with wind from the N. and N. E. Rain fell on the 10th, 11th, 18th, 24th, and 25th.

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\* According to the public papers, on the 12th of this month, snow fell at Sackett's Harbour (on Lake Ontario) one and an half foot deep.

## DECEMBER.

The weather of December was considerably colder than that of the preceding month, there being many days during which the thermometer was many degrees below the freezing point. The mildest day was the 1st, when the mercury stood at 7 A. M. at 41; at 3 P. M. at 47; and at 7 P. M. at 43. The coldest day was the 21st, when it was at 7 A. M. at 20; at 3 P. M. at 26; and at 7 P. M. at 24 degrees. On the 25th, 27th, and 31st, the thermometer was at 25 degrees at 7 A. M. Rain fell on the 8th, 17th, 28th, and 29th. We had a considerable fall of snow on the 20th. Wind for the most part northerly.

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*Quarterly Report of the Diseases which prevailed in the city of New-York, during the months of October, November, and December, 1813*

*Cholera, diarrhœa, dysentery, intermitting, remitting, and typhus fevers*, which usually prevail during the summer and first fall months, were continued throughout the month of October, when they resigned their place to the ordinary inflammatory complaints which have frequently been noticed in our quarterly reports of the diseases prevalent at this season of the year; and, as in former years, cases of the *bilious remittent fever* occasionally appeared even during the frosts of December; not so the effects of cold upon the other forms of fever, which have been so frequently and so absurdly identified with our indigenous remittent.

Among the phlegmasiæ of the last quarter, we have had occasion to see many cases of *rheumatism*, and that form of the same disease as it appears in fashionable life, the *gout*.



We denominate them forms or varieties of the same disease, believing them to be of the same inflammatory nature, and though differing frequently in the seat of the inflammation, and the causes which produce it, that they are to be treated by the same class of remedies. Various opinions divide physicians relative to the nature and origin of gout; as far as the author of these remarks has seen the various forms of this disease in the course of twenty years private practice, as well as in his attendance upon many of our public institutions, he has been led to the following conclusions upon this interesting subject :

1st. That gout is not an hereditary disease in the sense in which it is usually considered ; that it is only hereditary as far as fortune, and its attendants, ease, indolence, luxury, habits of intemperance, both in eating and drinking, and that predisposition which arises from a strong and vigorous constitution, are hereditary. Accordingly, it is observed by Hoffman, that "many have lost their gout with their fortunes," being compelled to obtain their subsistence by the sweat of their brow. Similar facts are related by Van Swieten\* and Schenckius. Hence, too, females, who rarely indulge in the excesses either of the bottle or the table, are as rarely the subjects of this disease ; and when they are so, it is usually after the cessation of the menses, and is then, for the most part, induced by the excessive use of wine or ardent spirits. The writer has also observed that in

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\* Van Swieten mentions particularly the instance of "a certain priest who enjoyed a rich living, and had been an old and constant sufferer from the gout, but happening to be taken by the pirates of Barbary, he was kept constantly at work in the galleys for two years, which had this good effect, that afterwards, when he was ransomed from captivity, having lost all his troublesome and monstrous fatness, he never once had a fit though he lived several years after the event."—*Comm. ad aph.* 1255.

That in correspondence with the use of these remedies, both the diet and the regimen of the patient should be simple and strictly antiphlogistic.

9th. That during the febrile stage of the paroxysm, the part or parts affected should be lightly covered with soft flannel or carded cotton, for the purpose of soothing the existing irritation, and of promoting a perspiration from their surface; but that both the practice of loading the limb with the accustomed strata of flannel, and thereby of adding to the heat and inflammation of the parts, and that of applying cold water or other cold applications to the affected limb, are alike prejudicial and dangerous, and are equally to be reprobated.

10th. That at the termination of the febrile or inflammatory stage of gout, as after other inflammatory diseases, the same means of restoring the tone of the system are indicated, viz. chalybeates, bitters, the moderate use of animal food, wine, porter, exercise, and in the summer season, sea bathing.

The writer of this article is aware that the opinions he has expressed, both as to the exclusive inflammatory character of gout, and especially the mode of treatment he has advised, will be considered as heresies by physicians in general, as well as by their patients; he would, however, observe, that the treatment recommended has not only been pursued in his own private practice with the most salutary effects, but that the use of blood-letting in particular, which it is his object to recommend in the treatment of gout, has long since been sanctioned by the truly respectable names of Sydenham, Huxham, Cullen, Musgrave, Macbride, Hamilton of Lynn, and our late distinguished countryman, Dr. Rush.



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## FOREIGN INTELLIGENCE.

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### *Humboldt's Political View of New Spain.*

The arrival of a second volume of this splendid work, enables us to lay before our readers some curious information respecting the fever which reigns epidemically on the eastern coast of New Spain.

Vera Cruz is considered as the chief seat of the *vomito*, which is certainly the same disease with the yellow fever that has afflicted the inhabitants of the United States of America since 1793. Clavigero and other writers affirm, that it occurred for the first time in 1725; but M. Humboldt is of opinion, that yellow fever has occurred, sporadically, whenever persons born in a cold climate have been exposed, in the torrid zone, to air loaded with *miasmata*. In the sixteenth and seventeenth centuries, the mortality was probably much less than afterwards: 1st. Because the tropical part of America was only visited by the Portuguese and Spaniards, whose constitutions are less hurt by great heat than the inhabitants of more northern countries; 2d. The early colonists of the West-Indies were not collected into such populous towns; 3d. Because, after the discovery of the American continent, the Spaniards were less attracted by commerce to the warm and humid shores, and preferred the more temperate elevated plains of the interior. Panama and Nombre de Dios were at first the only ports in which, on certain occasions, there was a considerable concourse of strangers, and, as early as 1535, the former was a dangerous residence for Europeans, and the latter was abandoned in 1584. We must not confound the period when a

those families where it is pronounced to be hereditary, that it is uniformly earned by the descendant, and that it is not an exclusive patrimony : accordingly it happens that not only the females, but such of the male members of the same family, as lead lives of temperance and industry, escape the disease. For the same reason, gout never appears in early life, except when induced by indolence, intemperance and dissipation.

2d. That gout takes place for the most part in the sanguine temperament, in the plethoric habit of body, and is exclusively an inflammatory disease of the whole system, as well as of the part affected.

3d. That its associate or vicarious diseases, apoplexy, palsy, asthma, habitual catarrh, eruptions on the skin, obstructed viscera, and dropsy, arise from the same habit of body, and from the same causes.

4th. That the deposits of saline or earthy matter which take place upon the joints in gout and rheumatism, in the kidneys and bladder occasioning stone and gravel, in the brain of apoplectics, in the arteries of advanced life, in the coronary vessels, and valves of the heart, as frequently attendant upon angina pectoris and other diseases of that organ,\* have the same common origin, and that these extravasations are usually the effects of an overloaded state of the blood vessels.

5th. That although the same earthy or saline materials exist in the blood in a state of health, and are constantly passing off in our excretions, as appears from the observations and experiments of Scheele, Woollaston, Brande, Pearson, and others, they are in no instances the cause of gout, but when deposited upon the joints in that disease, or upon other

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\* See Warren's valuable work on the Diseases of the Heart.—See also Baillie's Morbid Anatomy.



parts of the body, that such deposits are the effects of plethora, the parent of both.

6th. That the *predisposing* causes of gout are the excessive use of wine, ardent spirits, animal food, the condiments of the table, and the neglect of the exercise necessary to counteract their effects upon the constitution. While the check of the excretions by the cold of autumn and winter, or the sudden impetus given to the circulation by the returning spring, prove the most usual exciting causes of this disease. Hence we find gout, like rheumatism and other inflammatory diseases, to be the attendants upon autumn, winter, and spring, but rarely to be met with during the summer season, when our diet consists of a large proportion of vegetable food, and the excretions, especially by the surface, are most abundant; hence, too, it is observed, that persons who are remarkable for their excessive discharges by the skin are rarely the subjects of gout, even though the usual causes of this disease are at the same time indulged in to a great degree.

7th. That, as the causes of gout are *intemperance* and *indolence*, the best means of preventing this disease may be summed up in their immediate antidotes, *temperance* and *exercise*; but where the patient has not resolution enough to withstand the temptations of the table, and is unable to take the necessary exercise, that occasional evacuations by the lancet, and other means of diminishing the fulness and excitement of the vessels, should be employed.

8th. That the most effectual means of removing the inflammatory action attendant upon the first stage of the paroxysm of gout, consist in depletion by the *lancet*, *cathartics*, and such remedies as operate by restoring the excretions from the surface of the body, the physician paying due regard in the use of these means to the constitution of the patient, his time of life, and season of the year.

That in correspondence with the use of these remedies, both the diet and the regimen of the patient should be simple and strictly antiphlogistic.

9th. That during the febrile stage of the paroxysm, the part or parts affected should be lightly covered with soft flannel or carded cotton, for the purpose of soothing the existing irritation, and of promoting a perspiration from their surface; but that both the practice of loading the limb with the accustomed strata of flannel, and thereby of adding to the heat and inflammation of the parts, and that of applying cold water or other cold applications to the affected limb, are alike prejudicial and dangerous, and are equally to be reprobated.

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disease was first described with the date of its first appearance. The most ancient description of yellow fever, is by John Ferreyra de Rosa, a Portuguese physician, who observed the epidemic which prevailed at Olinda, in the Brazils, from 1687 to 1694, shortly after the Portuguese army had conquered Pernambuco. In 1691, it appeared in Barbadoes, and was called Kendall's fever; but there was no proof of its having been imported from Pernambuco. Ulloa reports, from the information of the natives, that the *vomito prieto* was not known at St. Marthe and Carthagená before 1729-30, or at Guayaquil before 1740.

The black vomit has never yet been observed on the west coast of New Spain. The inhabitants of the sea shore, from the mouth of the Papagallo to Saint Blas, are subject to gastric, which often degenerates into adynamic fever; and it may be stated, that a bilious constitution reigns almost continually in these plains, which, though arid and burning, are intersected by marshes, the resort of the crocodile. The yellow fever, and we request the attention of our readers to the fact, is still unknown even at Acapulco, which Humboldt describes as one of the most unhealthy situations of the new world, where the heat is more oppressive, and the air more stagnating than at Vera Cruz; where the inhabitants, for a great part of the year, do not see the sun, except through a stratum of olive-coloured vapour, not affecting the hygrometer; and where heaps of fish putrefying, exhale vapours which are considered as the chief cause of the bilious putrid fevers which reign upon that coast, and which, with cholera morbus, carry off numbers of the Mexicans, who descend from the high table-lands to purchase goods on the arrival of the galleons. So favourable does the situation of Acapulco appear to Humboldt for the development of yellow fever, that he attempts to account for its absence. "Perhaps, if this port, instead of being frequented by ships from Manilla



Guayaquil, and other places of the torrid zone, received ships from Chili and the northwest coast of America; if it were visited at the same time by a greater number of Europeans, or of the highland Mexicans, the bilious fever would soon degenerate into yellow fever, and the germ of this last disease would develop itself in a still more fatal manner than at Vera Cruz." Our readers will probably recollect Dr. Mitchill's theory of *septon*, and his illustration of it, by ascribing the healthiness of all limestone countries to the absorption of the septic acid. Of the falsity of this hypothesis, Gibraltar has furnished an incontrovertible proof, and the great lime kilns of Acapulco afford another; still, however, such is the political influence of Dr. Mitchill's theory, that on Humboldt's arrival at Philadelphia from the West-Indies, the hatchways were gravely painted with lime-water to absorb the *septon* which was supposed to be aboard the vessel: the poor Spanish sailors, in their ignorance, naturally enough concluded, that it was some *magical operation*, from which such a disproportionate effect as the destruction of contagion was expected.

From the uniformity of the heat during the year at Acapulco, Humboldt dreads, that if ever the yellow fever is developed there, it will continue during the whole year, as in other situations where the temperature varies only two or three degrees during the year.

It is a mistake that the yellow fever never appears in the southern hemisphere. It, in fact, first attacked a number of Europeans at Olinda, in the Brazils; it prevailed at Guayaquil in 1740; and in the beginning of this century, at Monte Video, so celebrated for the salubrity of its climate. During the last fifty years, the yellow fever has not appeared upon the coast of the Pacific Ocean, except at Panama, and there, as at Callao, the commencement of a great epidemic is often marked by the arrival of some ships from Chili; not that

they imported the disease from a country where it never existed, but because its inhabitants, coming from the healthiest country in the world, experience the same fatal effects of a sultry air, loaded with putrid emanations, as the inhabitants of the north.

On the coast of Mexico, an intimate connexion is observed between the progress of disease and the temperature of the air. At Vera Cruz there are only two seasons; that of the north winds, which blow from the autumnal to the vernal equinox, and of the southeast, which blows pretty regularly from March to September. The *vomito* does not commence, generally, till the medium heat is 75° Fahr. and is, therefore, seldom seen in December, January, and February; and though May is warmer than September and October, its ravages are most dreadful in these latter months, because a certain duration seems necessary to develop its full force. Thus, when it has been very violent in summer, it continues more or less during winter; but when it has been mild in summer, it ceases altogether; also, the rain which lasts from June to September, cannot be without influence. The commencement and termination of the rainy season are most to be dreaded.

M. Humboldt is of opinion, that the *vomito* is not *naturally* contagious, but that it is not inconsistent with other pathological phenomena for it to become so, from the influence of climate and seasons, the accumulation of sick, and individual susceptibility. Thus between the tropics, *e. g.* at Vera Cruz, the *vomito* is universally allowed to be *not* contagious; while, in the more temperate climate of Europe, its contagious nature was as indisputably proved, by the escape of individuals in the very focus of the disease, who secluded themselves; and in the intermediate climate of North America, its contagious nature has always been the subject of violent controversy. In tropical situations, a second attack of



yellow fever is rare, at Vera Cruz unknown, but in the United States it is not uncommon.

Near Vera Cruz, the *vomito* never occurs higher up than three thousand and eighty feet above the level of the sea, which is exactly the limit below which the Mexican oak ceases to grow.

It is remarkable, that persons born and brought up in Vera Cruz, are not *there* subject to the disease. The same is true at Havanna, with regard to its inhabitants; and yet the natives of Havanna are sometimes attacked with yellow fever when they visit Vera Cruz, in August or September; while, on the contrary, natives of Vera Cruz have died of yellow fever at Havanna, Jamaica, and the United States.

It is also remarkable, that the natives of equinoctial countries, such as Vera Cruz and Havanna, are not susceptible of yellow fever in their own country, while, in the more temperate climates of North America, and Old Spain, the natives suffer equally with strangers. The whites and *metis*, who inhabit the elevated interior of Mexico, especially the muleteers and recruits, suffer more from yellow fever than strangers who arrive by sea, probably from experiencing a more sudden change of temperature.

In the most sickly season, the shortest stay in Vera Cruz is sufficient to excite the disease in strangers. Inhabitants of the city of Mexico, going to Europe, generally remain at Xalapa until the very moment of the vessel sailing, set out in the middle of the night, and are carried through Vera Cruz in a litter to the boat waiting for them at the Mole, and yet these often die of yellow fever in a few days; and in like manner Europeans, who, on their arrival, find litters prepared to carry them up to Perote, do not always escape.

At Vera Cruz, the yellow fever generally lasts longer than six or seven days, and deaths in the course of thirty or forty hours are very rare; whereas in Old Spain, cases have

terminated fatally in six or seven hours. The mortality is always greatest, when several ships of war, and many merchant vessels arrive at the same time in summer; thus the cruel epidemic of 1794, followed upon the arrival of three men of war.

Although the *vomito* at first indicates an asthenic diathesis, blood-letting is considered dangerous at Vera Cruz, the passage from synocha to typhus is so rapid. In the commencement of the disease, minoratives, bathing, iced water, sorbets, and other debilitating remedies are preferred; but when, to speak in the language of Brown, whose system, it appears, has excited more enthusiasm in Mexico than in any part of Europe, the indirect debility manifests itself, the most powerful stimuli are given with great success; such as more than an hundred drops of sulphuric ether, and sixty or seventy drops of laudanum, every hour. Cinchona has not been so successful in Vera Cruz, as in the West-Indies and Spain, and the mercurial treatment, though frequently tried, has been very generally abandoned. Frictions with olive oil have been more successful.

The yellow fever appears at distant but irregular periods. The epidemic of 1762 is the first on record, which, however, does not go back more than half a century. It continued to appear every year until 1775, after which it did not return till 1794, although during all the intermediate years, the concourse of foreign sailors was very great. Since 1794, it has prevailed whenever the north trade wind ceases to blow. Meteorological observations have, as yet, thrown no light upon these periodical epidemics.—*Edinburgh Medical and Surgical Journal.*



*Lamarck's Botanical Investigations, Cuvier's Anatomy, &c.*

M. de Lamarck, who is intrusted with teaching at the Museum of Natural History every thing connected with animals without vertebræ, published some years ago the work which serves as the basis of his lectures, in which he explains in a way peculiar to himself the classes, orders, and genera of these innumerable animals: but as travellers have since discovered many new species and genera; as anatomists have better developed their structure; and, lastly, as the discrimination of M. de Lamarck has discovered several new relations between them, he has published an abridged syllabus of his course according to this perfected method, in which he contents himself with indicating the characters of the superior divisions, and merely gives the simple nominative enumeration of the genera.

He follows, in point of arrangement, the order of the degrees of complication, commencing with the most simple animals. Supposing that those which have no nerves apparent, are moved only in virtue of their irritability, he denominates them *apathic animals*; he gives the name of *sensible animals* to others without vertebræ, and reserves that of *intelligent animals* for those with vertebræ. To his old classes, which are already well known to naturalists, he adds that of *cirrhipedes*, which comprehends the *sea glands*, and their analogous genera, and which he places between the *anelides* and *mollusci*; that of *epizoary* or intestinal worms, which he places among his *apathic animals*; and that of the *infusores*, or microscopic animals without mouths or apparent intestines. He leaves the *echino-dermes* among the *radiarii* and the *apathic animals*, and in a greater degree of simplicity than that in which he places the intestinal worms.

We regret that want of room does not admit of our making known the other changes introduced by M. de Lamarck in

his orders, nor the numerous additions which he has made to the list of genera; but naturalists will not fail to examine them in the work itself.—*Tilloch's Philos. Magazine.*

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M. Cuvier, purposing soon to commence the printing of his great work on Comparative Anatomy, which has occupied his attention for so many years, has presented to the class the table of the divisions, according to which the animal kingdom ought to be distributed in this work. For a long time naturalists were struck with the great differences which distinguish the invertebral animals from each other, while the vertebral animals resemble each other in so many respects. Hence resulted a great difficulty in drawing up their comparative anatomy; the animals with vertebræ being easily generalized, but not the others: a remedy, however, has been suggested for this difficulty: from the way in which the propositions relative to each organ were always grouped, M. Cuvier concluded that there exist among animals four principal forms, the first of which is that with which we are acquainted under the name of vertebral animals, and the other three are nearly comparable to it by the uniformity of their respective plans. The author denominates them *mollusci*, articulated animals, and radiated animals or zoophytes, and subdivides each of these forms or ramifications into four classes, according to motives nearly equivalent to those upon which the four classes rest, which are generally adopted among the vertebral animals. He has derived from this, in some measure, symmetrical arrangement, a great facility in reducing under general rules the diversities of organization.

The comparison which the same member has drawn of the osteology of vertebral animals, has furnished him with some new ideas as to the osseous structure of the head in this branch, and which he has also presented to the class.



It had been long since ascertained that oviparous vertebral animals, *i. e.* birds, reptiles, and fishes, had several common relations of organization, which made them differ from the viviparous or mammiferous vertebral animals ; M. Geoffroy Saint Hilaire had even presented some years ago an extensive and elegant work, of which we gave an account at the time, in which he proved, among other things, the identity of structure of the heads of all the ovipari, and the relations of the numerous pieces which enter into their composition, with those which we distinguish in the foetus of the mammiferæ, in which, as is well known, the bones are much more subdivided than in adults.

M. Cuvier, adopting the views of M. Geoffroy, has endeavoured to determine, in a certain manner, to what bone of the head of the mammiferæ each groupe of bones of the head of the different ovipari answers ; and he thinks he has attained this, by adding to the analogy of the foetus of the former, the consideration of the position and of the functions of the bones : *i. e.* by examining what organs they protect, to what nerves and vessels they give a passage, and what muscles are attached to them.—*Ibid.*

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M. de Humboldt has published the first volume of his *Observations on the Animals of America*, in which he enters not only upon different inquiries as to the condor, the electrical eel, the crocodile, and many other subjects which we stated in our preceding analysis ; but he has also given several entirely new memoirs, particularly one upon the apes of the new world, eleven or twelve species of which only had been described by Buffon and Gmelin, but which M. de Humboldt, by adding his own observations to those of M. d'Azzara and Geoffroy Saint Hilaire, extends to forty-six.—*Ibid.*

Capt. Laskey has in the press a scientific Description of the Rarities in that magnificent collection "The Hunterian Museum," now deposited at the College of Glasgow. It is intended to comprise the rare, curious, and valuable articles in every department of art, science, and literature contained in that great repository. This work, so generally interesting, may be expected to appear in July, when we have no doubt it will be received with the favour so acceptable an offering deserves.

Mr. Thomas Forster has in the press, *Researches concerning Atmospheric Phenomena*, in one volume, 8vo.

Mr. Bakewell's *Introduction to Geology* will shortly appear.

Professor Leslie has in the press a valuable work "*On the Relations of Air to Heat and Moisture.*"—*Ibid.*

#### OBITUARY.

DIED, in London, in November last, WILLIAM FRANKLIN, Esq. son of the late celebrated Dr. Franklin, and formerly Governor of the state of New-Jersey.

#### RECENT AMERICAN PUBLICATIONS.

*Catalogus Plantarum Americae Septentrionalis huc usque Cognitarum Indigenarum et Cicurum*: or a Catalogue of the hitherto known Native and Naturalized Plants of North America; arranged according to the sexual system of Linnæus. By Henry Muhlenberg, D. D. Minister at Lancaster, in Pennsylvania. Lancaster. W. Hamilton. 8vo.

*Elements of Surgery for the use of Students*, by John Syng Dorsey, M. D. Adjunct Professor of Surgery in the University of Pennsylvania, one of the Surgeons in the Pennsylvania Hospital, &c. Philadelphia. E. Parker. 8vo. 2 vols.

*The Principles of Midwifery, including the Diseases of Women and Children*. By John Burns, Lecturer on Midwifery, and member of the Faculty of Physicians and Surgeons, Glasgow. The third American edition, with additions and improvements. By Thomas C. James, M. D. Professor of Midwifery in the University of Pennsylvania. Philadelphia. T. Dobson. 8vo. 2 vols.

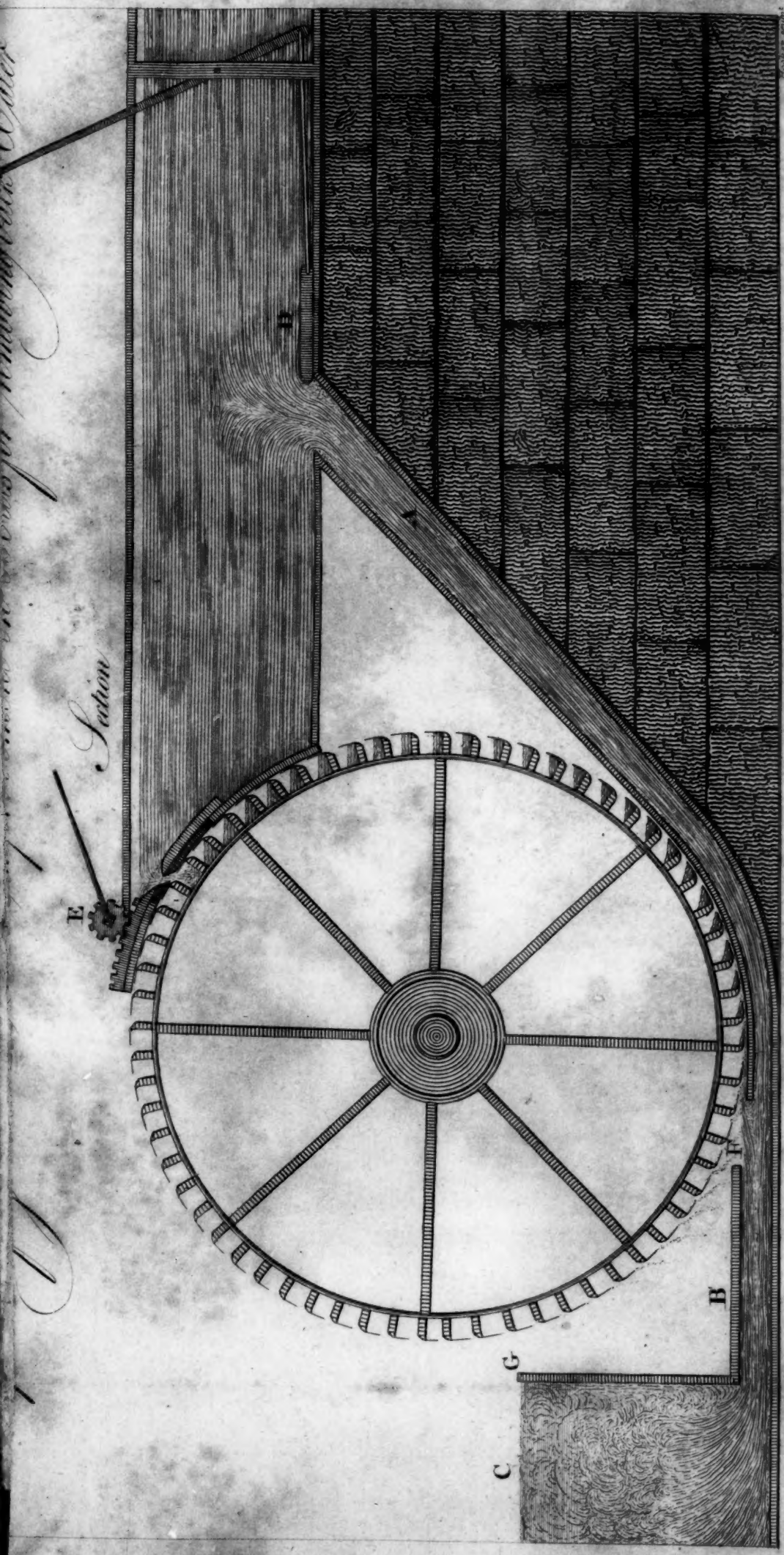
*Elements of Physiology*. By A. Richerand, Professor of the Faculty of Medicine of Paris, &c. &c. &c. Translated from the French, by G. J. M. De Lys, M. D. With notes, by N. Chapman, M. D. Professor of the Materia Medica in the University of Pennsylvania. From the first edition; revised, corrected, and enlarged. Philadelphia. T. Dobson. 8vo.

*General Repository and Review*; to be continued quarterly. No. VII. July, 1813. Cambridge. Hilliard. 8vo.

*The Western Gleaner*. Published monthly. No. I. for December, 1813. [Edited by C. E. Aigster, M. D.] Pittsburgh. Cramer & Co.







**A** The main tube through which the water runs to drive away the back water: **B** The horizontal tube  $\frac{1}{3}$  larger than the main tube which receives the water from the main tube, as also the back water, and the water which has been expended in turning the wheel: **C** the back water which is kept from flowing on the water wheel, by the superior power of the water which rushes down the main tube: **D** the gate which closes the main tube: **E** The circular gate: **F** The opening to receive the back water: **G** The back head.